

**TITLE:** SBCT Information Paper

**AUTHOR:** Kawasaki, Lawrence -U.S. Army Corps of  
Engineers, Honolulu District

**DATE:** January 6, 2003

**EXHIBIT 3**



**US Army Corps  
of Engineers**  
Honolulu District



6 January 2003

## **INFORMATION PAPER**

**SUBJECT: Honolulu District Stryker Brigade Combat Team Program**

**1. Purpose:** To provide information on the subject program for MG Van Winkle's visit to the 25<sup>th</sup> Infantry Division Commander (MG Olson)

**2. Points of Major Interest and Facts:**

a. The United States Department of the Army selected the 2nd Brigade, 25th Infantry Division (Light), at Schofield Barracks as one of six brigades to transform into a Stryker Brigade Combat Team (SBCT). This selection is conditional upon the outcome of an ongoing Army Environmental Impact Statement (EIS).

(1) The Honolulu District (POH) is the lead agent in preparing the EIS for the U.S. Army Garrison, Hawaii (USAG-HI). POH anticipates completion of the Draft EIS in March 2003 and a Record of Decision in October 2003 (approximately two years after the start of the EIS).

(a) First major EIS for Army training in Hawaii. Baseline cultural and natural resource surveys must be developed (existing in most areas).

(b) High public interest (cultural, environmental and native Hawaiian issues).

(c) SBCT master planning and training doctrine being developed concurrently with the EIS (major challenge). Critical information still outstanding (see attached table).

(d) Past attempt at major range construction in Hawaii led to proposed conservation measures by the U.S. Fish and Wildlife Services (USFWS). These measures rendered the range inoperable. POH is working extensively with USFWS and other experts to ensure conservation measures can be reasonably mitigated for SBCT range projects.

(2) The current SBCT military construction program for Hawaii consists of 28 projects: FY04 (4), FY05 (10), FY06 (2), FY07 (2), and Long Range (10) with an estimated value of \$627.5M. These projects include land acquisition as well as construction of new ranges, roads, and support facilities. POH is developing an acquisition plan with USAG-HI to expedite the execution of this program and help the 25<sup>th</sup> Infantry Division meet its SBCT Initial Operation Capability (IOC) date in May 2007.

(3) POH also continues to provide reimbursable support to USAG-HI through development of real estate planning documents, environmental documents, and DD 1391 programming documents.



# **SBCT Environmental Impact Statement (EIS)**

## **Final EIS Signature**

**Mr. Stan Sokoloski**  
**IMA PARO**  
**9 April 2004**

**Presented by**  
**U.S. Army Hawai'i**

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# **SBCCT Environmental Impact Statement (EIS)**

## **Final EIS Signature**

**LTG Campbell**  
**USARPAC**  
**12 April 2004**

**Presented by**  
**U.S. Army Hawai'i**

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## *Purpose and End State*

*Purpose: To provide an update on the SBCT EIS, the recommendations of the Final EIS, and the road ahead to the Record of Decision.*

*End State: Approval and signature of the Final EIS.*

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# *Technical Justification of Significant*

## *Determinations*

### Background Slide

- While legal under ESA and NHPA, we will lose resources permanently.
- Because these are islands, cultural and biological resources are scarce, valuable, and impacts are magnified.
- **For biological resources**
  - The biologists agree that it would only take one wildland fire to significantly damage biological resources.
- **For cultural resources**
  - The archeologists agree that despite the PA, the only mitigation we are committing to is “site avoidance, if possible”. If we can’t avoid the site, it can be lost forever.
  - The public does not accept data recovery as mitigation.
  - Impacts to “Areas of Traditional Importance” are not covered under NHPA even though we may significantly impact these resources because of
    - (1) the intensity of the impact,
    - (2) the importance of the resource and
    - (3) the uncertainty of the final project locations.

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**TITLE:** Biological Opinion of the U.S. Fish and Wildlife Service for Routine Military Training and Transformation of the 2<sup>nd</sup> Brigade 25<sup>th</sup> Infantry Division (Light), U.S. Army Installations, Island of Hawaii

**AUTHOR:** U.S. Fish and Wildlife Service

**DATE:** December 23, 2003



BIOLOGICAL OPINION  
of the  
U.S. FISH AND WILDLIFE SERVICE  
for  
ROUTINE MILITARY TRAINING AND TRANSFORMATION  
of the  
2<sup>ND</sup> BRIGADE 25<sup>TH</sup> INFANTRY DIVISION (Light)  
U.S. ARMY INSTALLATIONS  
ISLAND OF HAWAII



*Haplostachys haplostachya*

December 23, 2003  
(1-2-2003-F-02)



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2003, contained modified or additional project information that shall supercede or supplement portions of the original Biological Assessments. These three documents submitted by the Army, and taken together; provide the basis for the Project Description of Army training actions within the action area (see Figure 1).

#### PTA History, Location and General Environment

PTA is located in a saddle between the volcanos of Mauna Kea and Mauna Loa approximately 40 kilometers (27 miles) south of Waimea and approximately 58 kilometers (36 miles) west of Hilo (see Figure 1). The United States first used the lands in this area in 1942 for military maneuvers during World War II. During the next several decades, PTA grew into the largest U.S. Army holding in the State of Hawaii consisting of approximately 44,030 hectares (108,801 acres). The majority of the land or 34,324 hectares (84,817 acres) was acquired through both Governor or Presidential Executive Orders. Another 9,303 hectares (22,988 acres) were added through a 65-year lease with the State of Hawaii, which expires in 2029. The Army leases 409 hectares (1,011 acres) from the Parker Ranch and another 9 hectares (22 acres) are held through a variety of sources (U.S. Army 2003a). PTA is bordered by Mauna Kea State Park and Parker Ranch to the north, Hawaii State lands to the east and south, and Kamehameha School lands plus State lands along the western edge of PTA.

PTA consists primarily of a sub-alpine tropical dryland ecosystem with upper montane to alpine elevations of 1,228 to 2,637 meters (4,029 to 8,652 feet). The cool-tropical climate is characterized by a 12.8° Celsius (55° Fahrenheit ) average annual high temperature and a 10.6° Celsius (51° Fahrenheit) average annual low temperature. PTA experiences a greater diurnal temperature fluctuation than a seasonal fluctuations. The soil consists of approximately 80 percent lightly weathered pahoehoe and aa lava and about 20 percent consists of volcanic ash derived soils. There are no surface streams, lakes or bodies of water within PTA due to low rainfall and porous substrates. Rainfall, fog drip and occasional frost are most likely the main sources of water that sustain the plants and animals in the dryland habitat of PTA (U.S. Army Garrison 2002). Existing vegetation is a complex mosaic of 24 plant communities, including 10 native Hawaiian plant communities.

#### Areas of Special Concern

Military training use of PTA expanded rapidly from the late 1940s through the 1970s. During this time the natural resources of the area were only sparsely studied and the unique biology of the land was not fully recognized. However, a surge of fieldwork in the 1980s and 1990s revealed that PTA harbors a high density of rare plant and animal species living in a relatively native ecosystem. Today, many scientists consider the sub-alpine tropical dryland ecosystem as being one of the rarest on the planet (U.S. Army Garrison 2002). Recognizing a strong need to protect and enhance the natural resources of PTA, the Army now provides funding and supports a staff to support environmental programs. Several areas have been fenced (Figure 3) to protect listed plant species from ungulate browsing and/or inadvertent impacts from training maneuvers, and other areas have either State or Federal designation:

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unauthorized personnel due to fired munitions hazards. Fires are not controlled in the Impact Area (due to the presence of unexploded ordinance) and uncontrolled fires may potentially spread from the Impact Area to other areas of the installation. Because the Impact Area is unsafe for human activity, surveys for listed species cannot be conducted, nor can it be accurately determined which species will be lost, or the magnitude of the loss. This area may be a source of pests for other parts of the installation due to the inability to carry out natural resource measures such as invasive plant control, ungulate removal, or small mammal trapping. The Impact Area effectively subdivides PTA into an eastern and western section (see Figure 3). The loss of this large, central area fragments natural habitats for bats and listed plants thereby diminishing ranges of species and genetic transfer among populations, subpopulations, and individuals. The Service has determined that there is a high probability that any listed plant species or roosting habitat for the Hawaiian hoary bat within the Impact Area will be lost through time due to fire or direct impact of live-fire munitions. The historic and future loss of this habitat and occurrences of listed species is considered important.

The Transformation Biological Assessment attempted to address the issue of listed plants and habitat that may be within the Impact Area by compiling a community plant map with 24 plant vegetation types delineated from aerial photos (see Figure 20 in the Transformation Biological Assessment). However, this methodology gives only a prediction of species presence and relative abundance based on vegetation type. According to this hypothesis, there is a high probability that *Silene hawaiiensis*, *Hedyotis coriacea*, and *Asplenium fragile* var. *fragile* would be found within the Impact Area. In addition, two listed species, *Stenogyne angustifolia* and *Zanthoxylum hawaiiense*, were observed while conducting botanical surveys for the construction of the Battle Action Course and Anti-armor Live-fire Tracking Range. Therefore, we know some plant occurrences that will be permanently impacted, and we can predict that at a minimum, occurrences of at least three other plant species will be lost from fire or munition rounds.

#### Off-Road Maneuver Areas

We have also determined that native habitat for listed plants and bats will likely be destroyed in designated Stryker off-road maneuver areas (see Figure 6). Vehicular off-road maneuver activity can either directly crush the plant or indirectly affect the species by habitat degradation from soil compaction, dust and habitat fragmentation. We do not know the frequency, or number of Stryker vehicles, that will utilize the off-road maneuver areas either within the northern portion of PTA, or the Kearnuku Parcel, each year. It is our understanding that multiple Stryker vehicles will be driven in formations across any and all accessible land within these designated areas. Therefore, we determined that there is a very high probability that off-road maneuver areas will be completely impacted over time. This loss of habitat also creates population and habitat fragmentation, essentially diminishing ranges of species and genetic transfer among individuals of a species. The Stryker maneuver areas are not off-limits to Natural Resources staff conducting management actions, however it would not be prudent to invest time and resources into these high-use training areas because it is likely that remaining native vegetation and listed species will be lost in the long term. The two plant species that will be permanently impacted by this activity are

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*Haplostachys haplostachya* and *Silene hawaiiensis*. The loss of this habitat and occurrences of listed species is considered important. A more detailed analysis of these impacts shall follow in the species-specific effects section.

Indirect effects of off-road maneuvers is the creation of large plumes of dust (particularly in the Keamuku Parcel) and dust accumulation on adjacent habitats and species over time. See the discussion on dust below.

#### Construction Impacts

Nine construction projects are included as part of the action at PTA. Two of these projects, the Battle Action Course and the Anti-armor Live-fire Tracking Range, will result in the complete loss of several occurrences of listed plants and roosting habitat for the Hawaiian hoary bat. The project footprint for the Anti-armor Live-fire Tracking Range will impact several occurrences of *Silene hawaiiensis*. The Battle Action Course will impact one *Zanthoxylum hawaiiense*, and several occurrences of *Haplostachys haplostachya* and *Silene hawaiiensis*. Each of these species-specific impacts will be discussed in greater detail in the effects section. Overall, approximately 1,100 hectares (2,718 acres) of land will be impacted for the construction of these two training facilities (this includes conversion of existing training areas). The Service has determined these two construction projects have a very high probability of impacting all occurrences of listed plants within the project footprints and shrubland habitat for the Hawaiian hoary bat. The construction and training use of these two facilities is considered to be a permanent loss of species and habitat through time. The indirect effects associated with the construction of these nine projects include habitat fragmentation, edge effects, and dust production.

#### Fire

When assessing fire risk for PTA, the following elements were considered: fuel types, training activities, fire history, significant topographic barriers, buffers, defensible boundaries, and fire minimization and prevention. The threat of fire resulting from training exercises can range from low to very high, depending upon the location of the species or habitat in relation to the training action. Fires can also be started from non-training activities or accidental ignition such as catalytic converters, cigarettes, maintenance or construction equipment, or hunters. Fire is a considerable threat to native taxa and natural communities in Hawaii. Few native Hawaiian plants and animals are adapted to wildfires, and none have been found to be dependent on fire for survival. Consequently, most native plants and animals perish during fires with little subsequent recovery. Once a fire sweeps through native vegetation it allows for the intrusion of non-native, fire-adapted, invasive plants and prohibits regeneration of native plants. Each successive fire that reaches native shrubland or woodland forest reduces habitat for listed species, affects the moisture and canopy of the native habitat boundary, and increases the number of alien plants in areas of native vegetation. Invasive plant encroachment increases after a major disturbance event such as a fire and this secondary threat can have a significant effect to any threatened or endangered plant species not destroyed by the fire.



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Several fires have occurred on Army installations within the last few months that reinforce the fact that full control of fires is not possible, even with precautions and restrictions in place. The latest fire at Makua (July 2003) went out of prescription and ended up burning over 850 hectares (2,100 acres) including 61 hectares (151 acres) of native habitat and several listed plant species. In addition, there have been two recent fires at Schofield Barracks Military Reservation (July and August 2003) and Kahuku Training Area (June 2003) that impacted critical habitat and consumed additional native habitat. Therefore, the fire risk, as stated in the Transformation Biological Assessment, is underestimated and the Service believes the risk to all species and habitats is higher than the Army has indicated.

To reduce the threat of wildfire at PTA a WFMP has been finalized and signed by the Army. Some measures of the plan have already been put into effect. See WFMP discussion in the Project Description.

#### Ungulates

Four species of ungulates have been observed at PTA including feral goats, sheep, mouflon sheep, pigs and sheep/mouflon sheep hybrids. The goat is the most common ungulate at PTA, as it is better adapted for survival in the dry, rugged terrain found on this installation. Mouflon sheep and sheep hybrids are more frequently observed in the higher altitude areas of PTA primarily in the northeast. Pigs are found mostly in the northwest. Feral ungulates have degraded extensive tracts of native vegetation through grazing and trampling, thereby affecting habitats of listed species as well as having direct impacts to the species themselves from foraging. Feral ungulates may also increase the spread of alien plant species by carrying seeds in their feces and fur. Ungulates have an extremely detrimental effect (on native vegetation and listed species) and we have determined ungulates to be the second most severe impact to species and habitats after military live-fire training.

Construction of fence units will preclude feral ungulates from high density listed plant areas thereby reducing the threat level from the detrimental effect of ungulates browsing on listed plants and their habitats. See fence discussion below.

#### Non-native Species

The threat of increased non-native species introductions and their subsequent spread is always prevalent within, and adjacent to, high disturbance areas such as military training facilities. Non-native species include plants, feral ungulates (sheep, goats, mouflon, and pigs), small mammals (rats, mice, mongooses, and feral cats), birds, invertebrates, and bacterial, viral, and fungal plant diseases. The combination of fire, grazers, browsers and alien introductions has collectively altered the Hawaiian environment. Invasive plants tend to be successful colonizers. They are often drought tolerant, quick to utilize and capture resources (e.g., nutrients, light, water, and space), fast growing, and reproductively successful. Currently 33 out of 159 known invasive plant species at PTA are targeted species for management (U.S. Army 2003a). The alien plant species most likely to be spread by Army activities are those that have a high fuel load, are fire adapted,



Hawaiian hoary bat as a reasonable approach to conservatively estimate the range of a species in an area when extensive surveys have not been conducted (Service 2000). The validity of using habitat measures is corroborated by the documented presence of Hawaiian hoary bats in several locations on PTA throughout the year.

The direct and indirect effects of SBCT Transformation are expected to result in a cumulative loss of the available roosting habitat for Hawaiian hoary bats in the Impact Area and off-road maneuver area, due to habitat destruction, degradation, and fragmentation. There is also the possibility that treeland roosting habitat could be lost outside of the Impact Area but the risk of this loss will be reduced by the WFMP. The severity of these effects on Hawaiian hoary bats would largely depend upon the frequency, intensity, location, and extent of wildfire, live-fire, and dismantled maneuvers that would occur repeatedly in the same areas. The ongoing adverse effects of roosting habitat loss would accumulate over time with the continuation of military training in the action area. The magnitude of direct and indirect effects of habitat loss (particularly of roosting habitat), however, and the number of bats actually injured or killed, is unknown. It is our biological opinion that all direct and indirect impacts of the proposed action, when considered over the entire PTA/Keamuku Parcel action area, would be of concern over time without the implementation of minimization measures.

The Service analyzes the effects of the proposed action based on the assumption that the Army's existing and proposed minimization measures will be implemented to offset project-induced impacts to listed species. These measures will only partially offset the negative effects of military training and wildfire on bats. Neither the Routine nor the Transformation Biological Assessments propose specific measures or guidelines to address potential impacts to bats or their habitat. The Army also proposes no monitoring protocols to identify the presence of bats in particular habitat types, no procedures to protect bats from direct harm or harassment, and no reforestation is specifically identified to enhance or restore bat roosting habitat. However, the proposed fencing activities will remove the ongoing browsing pressure from ungulates and allow for natural recruitment of damaged treeland vegetation. In addition, implementation of the WFMP will reduce the frequency, intensity, and size of fires on PTA outside the Impact Area. Consequently, adverse impacts to the Hawaiian hoary bat associated with Army actions will be minimized and offset by fencing, ungulate removal, and wildfire threat abatement. This determination is based upon measures contained in the Project Description, implementation of the WFMP, and Standard Operating Procedures promulgated specifically to reduce impacts of Army actions on listed plant species.

Impacts to bat roosting habitat would be minimized by the construction of six fence units over approximately 9,308 hectares (23,000 acres) on PTA and the subsequent removal of ungulates from these areas. These fence units contain approximately 5,406 hectares (13,359 acres) of treeland communities providing potential available roosting habitat for Hawaiian hoary bats, and the existing fenced portions of the Kipuka Alala contain approximately 1,547 hectares (3,823 acres) of treeland communities. Thus, proposed and existing fence units will contain approximately

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6,953 hectares (17,181 acres) of treeland vegetation. (Note that existing fence units for Kipuka Kalawamauna and Kipuka Alala will be encompassed within the western portion of the new, proposed fence unit.) Feral ungulates will be removed in the proposed fence units through public hunting programs and contracted aerial control, to enhance survival and regeneration of native vegetation. In particular, the western fence unit when completed will enclose a large, contiguous area that contains the best-quality remaining native woodland and shrubland habitats on the installation, including approximately 5,190 hectares (12,825 acres) of treeland vegetation providing potential available roosting habitat for bats. The removal and continued control of non-native ungulates in fence units will contribute toward the restoration of damaged vegetation, and will enhance the survival and regeneration of treeland roosting habitat for bats.

Locations of all fence alignments will be determined by the PTA Implementation Team, with approval of the Army and the Service. In addition, the PTA Implementation Team, will develop management protocols for rare plant conservation, augmentation, and reintroduction; rodent and invertebrate control; and invasive plant control. Standard Operating Procedures will be revised to minimize the additional environmental impacts associated with SBCT Transformation and emphasize protection of the vegetation. All these measures will further enhance the foraging and roosting habitats used by bats.

Table 6. Area of treeland vegetation types where take of Hawaiian hoary bats is possible/likely, as measured indirectly by potential available roosting habitat, in the PTA action area (excluding the Keamuku Parcel).

Project Effects on Hawaiian Hoary Bats	Treeland Vegetation Destroyed/Degraded <sup>1</sup> (hectares [acres])	Treeland Vegetation Maintained/Enhanced <sup>2</sup> (hectares [acres])
Live-Fire and Wildfire (PTA) <sup>3</sup>	19,966 (49,317)	--
[Impact Area]	[7,999 (19,766)]	--
Off-Road Maneuvers – High-Probability Area <sup>4</sup>	956 (2,361)	--
Construction and Training Use of BAX and AALFTR <sup>4,5</sup>		
Construction and Maintenance of Fire breaks/Fuel breaks <sup>4</sup>		
Fence Units <sup>4,6</sup>	--	6,953 (17,180)
Unfenced Palila Critical Habitat Areas	--	1,369 (3,382)
Fire Management Areas		
Total	19,966 (49,317)	8,321 (20,562)
Net Treeland Vegetation Destroyed or Degraded	11,645 (28,754)	--

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### CONCLUSION

After reviewing the current status, the environmental baseline, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that implementation of the proposed action discussed herein is not likely to jeopardize the continued existence of any species covered in this biological opinion or adversely modify or destroy palila critical habitat. This conclusion is based on the following factors:

1. The Service anticipates that the direct and indirect effects of the proposed action will result in a decline in the number of Hawaiian hoary bats in the action area. This conclusion is based on the eventual, cumulative loss of all potential available treeland roosting habitat in the action area as a result of Legacy and SBCT Transformation training. However, the adverse effects of the proposed actions will be minimized by such measures as the construction of 9,307 hectares (23,000 acres) of new fence units, removal of ungulates, implementation of the WFMP, inclusion of Hawaiian hoary bat conservation and management into the Implementation Plan, and monitoring Hawaiian hoary bat presence and abundance.
2. The Service does not expect that Hawaiian hoary bats occur in large concentrations at PTA and only a small proportion of the bat's overall range on the island of Hawaii is likely to be affected by the proposed actions on the installation. This loss of bats at PTA is not likely to affect the status of the subspecies on Hawaii or throughout the State because this represents a small proportion of the Hawaiian hoary bat's overall range. The entire PTA/Keamuku action area comprises only about 13 percent of the bat's current range on Hawaii and approximately seven percent of its current State-wide range.
3. There will be direct and indirect adverse impacts to listed plant species from Legacy and Transformation training. Several measures have been included in this consultation to offset training impacts to plants. Approximately 9,307 hectares (23,000 acres) of fence units will be constructed and ungulates removed to allow natural habitat restoration and recruitment of these listed plant species. The Implementation Plan will address outplanting for each species to increase species distribution and abundance. In addition, the Implementation Plan will include: invasive plant and rodent control; dust study; buffers and new Standard Operating Procedures to minimize Army training on these species and their habitats.
4. All Legacy land-use and training activities in palila critical habitat will remain as currently stipulated under Army Regulations. However, the portions of Palila

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to be prohibited taking under the Act, provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be undertaken by the Army so that they become binding conditions in order for the exemption in section 7(o)(2) to apply. The Army has a continuing duty to regulate the activity covered by this incidental take statement. If the Army (1) fails to assume and implement the terms and conditions or (2) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to any permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Army must report the progress of the action and its impact on the Hawaiian hoary bat to the Service as specified in the incidental take statement (50 CFR § 402.14(I)(3)).

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of federally listed endangered plants or the malicious damage of such plants on areas under Federal jurisdiction, or the destruction of endangered plants on non-Federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law (HRS 195D).

#### **Amount or Extent of Take**

The Service anticipates that take of Hawaiian hoary bats will occur in the form of direct take resulting in the death or injury of individual bats, harm due to significant loss of potential available treeland roosting habitat, and harassment by noise and ground disturbance. Take is anticipated to be incidental, and not the purpose of, the carrying out of otherwise lawful activities related to the military activities described in this biological opinion.

1. The Service anticipates that take of Hawaiian hoary bats will occur in the form of harm (due to the loss of habitat), harassment, and injury or death as a result of Army activities described in the biological opinion. Take in the action area will include all bats associated with the loss of potential available treeland roosting habitat. Based on the past fire history of PTA, we anticipate that an average 254 hectares (628 acres) of all habitat types may burn per year outside the Impact Area, of which approximately 97 hectares (240 acres) consist of treeland vegetation providing suitable roosting habitat for bats. Therefore, the Service anticipates the proposed action will result in the take of all bats associated with the loss of no more than 97 hectares (240 acres) per year of treeland habitat outside the Impact Area for the first 5 years after this biological opinion is finalized. After the first 5 years, we anticipate that the effective implementation of the WFMP will result in the take of all bats



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associated with the loss of no more than 48 hectares (119 acres) per year of treeland habitat outside the Impact Area. We further anticipate that no more than 1,345 hectares (3,324 acres) of treeland habitat will be cumulatively lost in the action area outside the Impact Area and the high-probability Stryker off-road maneuver area. In addition, over time all treeland habitat within the Impact Area and the high-probability Stryker off-road maneuver area, which together comprise approximately 8,955 hectares (22,127 acres) of treeland habitat, will be lost. Take will be indirectly monitored for this incidental take statement by determining the area, in hectares, of treeland roosting habitat that is destroyed each year on PTA outside the Impact Area.

### **Effect of the Take**

The Service determines that the level of take quantified above is not likely to jeopardize the continued existence of the Hawaiian hoary bat or result in the destruction or adverse modification of palila critical habitat.

### **Reasonable and Prudent Measures**

The reasonable and prudent measures given below, with their implementing terms and conditions, are designed to minimize the impacts of incidental take that might otherwise result from the proposed actions. If, during the course of the actions, the level of incidental take is exceeded, the action agency is required to reinitiate consultation and review the reasonable and prudent measures provided in this biological opinion. In addition, the Army must cease the activities that caused the taking; must immediately provide an explanation of the causes of the taking; and must review with the Service the need for possible modification of the reasonable and prudent measures. The Army will offset unavoidable impacts through the implementation of the conservation measures as described in the Project Description.

The Service believes the following Reasonable and Prudent Measures are necessary and appropriate to minimize incidental take of Hawaiian hoary bat. The measures described below are non-discretionary and must be implemented.

1. Minimize direct and indirect effects on survival and reproduction of Hawaiian hoary bats in the action area.
2. Minimize loss and degradation of roosting habitat for Hawaiian hoary bats in the action area.
3. Minimize noise and ground disturbance to Hawaiian hoary bats associated with military activities in the action area.

**TITLE:** Biological Opinion of the U.S. Fish and Wildlife Service for Routine Military Training and Transformation of the 2<sup>nd</sup> Brigade 25<sup>th</sup> Infantry Division (Light), U.S. Army Installations, Island of Oahu

**AUTHOR:** U.S. Fish and Wildlife Service

**DATE:** October 23, 2003

**BIOLOGICAL OPINION**  
**of the**  
**U.S. FISH AND WILDLIFE SERVICE**  
**for**  
**ROUTINE MILITARY TRAINING and TRANSFORMATION**  
**of the**  
**2<sup>nd</sup> BRIGADE 25<sup>th</sup> INFANTRY DIVISION (Light)**  
**U.S. ARMY INSTALLATIONS**  
**ISLAND of OAHU**



**October 23, 2003**  
**(1-2-2003-F-04)**

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Extensive surveys for elepaio have been conducted in much of SBMR, SBER, SRAA, and in parts of KLOA, and KTA. The current status of the species in each area is fairly well documented (VanderWerf et al. 2001). In addition, a total of 46 elepaio have been mist-netted and banded at SBMR and SRAA since 1996 to facilitate monitoring of survival and reproduction. Rat control was initiated at SBMR in 1998. In 2001, rats were controlled in 19 elepaio territories using snap traps and 39 diphacinone bait stations (U.S. Army Garrison 2001). However, the current level of access to West Range is not frequent enough to allow adequate maintenance of the bait stations or to allow sufficient demographic monitoring to allow evaluation of the efficacy of the control program. Bait stations must be restocked regularly (weekly during the first 3-4 weeks) for the rat control program to be effective.

In 2000, a study of the effects of noise from military training was conducted at SBMR (VanderWerf et al. 2000), which showed that elepaio are not affected by noise at SBMR. More frequent access provided to SBMR in 2000 to conduct the noise study made it possible to maintain the bait stations more frequently, and reproduction of elepaio that year was similar to other areas where rats were controlled (VanderWerf et al. 2000, VanderWerf and Smith 2002).

## EFFECTS OF THE ACTION ON LISTED SPECIES

### General Impact Issues

This section outlines impacts that will effect many, if not all species in this biological opinion, and is meant as a review to facilitate an effects analysis for almost 50 species. The installation review is intended to present information that is pertinent to understanding effects at each installation. The installation sections are also intended to review the important training issues at each installation prior to the species by species effects.

### Fire

When assessing the fire risk for an installation, the following elements were considered: fuel types, training activities, fire history, significant topographic barriers, buffers, defensible boundaries, and fire minimization and prevention. Fire resulting from training exercises is the most significant threat to the federally listed species in the Action Areas. The alien plant species most likely to be spread by Army activities are those that have a high fuel load, are fire adapted, carry fire into the remaining native forests, and/or can establish rapidly in newly burned areas. Fire caused by military training increases the spread of these alien species. Fire is a threat to native taxa and natural communities in Hawaii. Few native Hawaiian plants and animals are adapted to wildfires, and none have been found to be dependent on fire for survival. Consequently, most native plants and animals perish during fires with little subsequent recovery. Once a fire sweeps through native habitat it allows for the intrusion of non-native invasive plants and prohibits the regeneration of native plants. Each successive fire that reaches native forest stands reduces habitat for listed species, affects the moisture and canopy of the forest boundary, and increases the number of alien plants in areas of native vegetation. Invasive plant encroachment increase after a major disturbance event such as a fire and this threat would have a significant effect on any threatened or endangered plant species not destroyed by the fire.

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Fires caused by activities of the original Polynesians in Hawaii probably played a large part in the decline of the native vegetation of the drier plains and foothills. These early settlers used fire exclusively in the lowlands in a shifting pattern of agricultural land use. Slash and burn agriculture created anthropogenic lowland vegetation. Although fires are not frequent in the mountainous regions, extensive fires have occurred in the lowland mesic areas with up to one-half of the alien species dominated areas being damaged by fires. Of these lowland ecological communities, shrublands and grasslands contribute most to the fire problem.

Several fires have occurred on Army installations within the last few months that reinforce the fact that full control of fires is not possible, even with precautions and restrictions in place. The latest fire at Makua (July 2003) was a prescribed burn that got out of prescription and ended up burning over 850.2 ha (2100 ac) including 60.7 ha (150 ac) of native habitat and several listed plant species. In addition, there have been two recent fires at SBMR (July and Aug 2003) and KTA (June 2003) that impacted critical habitat for elepaio, consumed additional native habitat which leads the Service to refute the fire risk as stated in the Biological Assessment, and therefore, the Service believes the risk to all species is higher than the Army has indicated.

A surface danger zone is a segment of a training range endangered by the firing of a particular type of weapon. A surface danger zone consists of the target area, impact area, ricochet area, secondary danger areas on all sides of the primary danger area, and other associated areas. Surface danger zones for ranges at SBMR terminate in a common impact area. The impact area is the primary danger area for all indirect fired weapon rounds. When applied to direct fire weapons, the impact area is the area located between established range limits in the approved surface danger zone. The impact area is off-limits to unauthorized personnel due to fired munitions hazards. The portion of the impact area where high explosive rounds have landed but did not detonate (duds) is termed a dedicated, or dudded, impact area (U.S. Army 2003a).

#### Non-Native or Invasive Plant Species

The ongoing threat from increased non-native plant invasion is always prevalent within, and adjacent to, high disturbance areas such as military training facilities. There are several potential sources of non-native plant introduction into Army installations including: mounted maneuvers, dismounted maneuvers, movement of equipment, vehicles, troops between installations and between islands, construction of buildings and roads, especially post fire. In addition, movements of troops into Hawaii from other states and countries and movements between installations in Hawaii increase the likelihood of habitat-altering weeds being introduced into installations and spreading into native habitats that support listed species. Some non-native invasive plants can also spread into undisturbed areas once they have become established in disturbed area. These alien plant species compete with native plants for light, nutrients, and space, and impact many of the endangered species both directly through competition and indirectly through alteration of the habitats these listed species require to survive (Cuddihy and Stone 1990).

Lower elevation plant communities have a higher threat level of invasion from non-native plants due to dry microclimates and proximity to potential seed sources from training activities. Non-

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percent of the 312 fires that recorded acreage were larger than 4 ha (10 ac) and the largest fire on record was 121 ha (300 ac). However, the paucity of large fire records may be due at least in part to incomplete record keeping. The greatest number of fires have been ignited at MF-2, in the impact area, at KR-5, and at CR-1 (see Figure 7 in the WFMP). These four locations were responsible for 51 percent of all fires.

#### Transformation Training

Major changes to live-fire activities at SBMR from SBCT forces include the addition of direct gunnery fire which refers to mechanized or tank firing using large caliber guns where the target is in view of the gunner. The Stryker-mounted 105 mm gun would be used in the Battle Action Course on SBMR. There would also be a reduction in 5.56 mm ball and tracer munition use and increases in other small arms ball and munition use. The increase in the use of direct gunnery and mortar ammunition may increase the potential for ammunition to land outside of the current fire break road due to velocity and charge. Therefore, additional use of these weapons particularly Stryker-mounted systems under SBCT may increase the number of rounds that land outside of the fire break road, increasing the risk of fire in the areas where endangered plant species occur (U.S. Army 2003b).

#### Fire Vulnerability Rating

The Biological Assessment defines fire vulnerability as the risk of fire ignition combined with the risk of fire spread as determined by characteristics of the vegetation and climate. SBMR has been divided into four fire vulnerability areas: very high, moderate, low and very low. The very high fire vulnerability area includes the impact area which is entirely vegetated by alien species and where the intensive training with highly incendiary devices occurs. Moderate areas include south range and other areas used for training with non-native vegetation such as grasslands, eucalyptus, or ironwood dominated plant communities. The low vulnerability areas includes the sites dominated by less flammable vegetation and not typically used for training activities. OP-Halo located just outside the fire break in South Range also falls into the low rating category. A very low fire vulnerability rating includes the westernmost areas of SBMR where training does not occur and over 80 inches of rain falls each year (U.S. Army 2003b).

#### Fire Risk Reduction

The potential for a wildland fire can never be totally eliminated. However, the risk of fires from training activities can be reduced. The WFMP incorporates minimization measures for fire prevention from all ignition sources. The most important measure includes the implementation of the WFMP, including: 1) implementation of a Fire Danger Rating System that will restrict training according to weather and fuel conditions and will be monitored hourly by range control; 2) construction of a 1,136 cubic meter (300,000 gallon) dip pond in fiscal year 2004; 3) relocating targets that are close to the fire break road further into the impact area to reduce the likelihood of overshoot rounds landing outside the fire break; 4) improvement of the fire break road around the McCarthy Flats ranges to the same standards as the existing fire break roads; and 5) managing the fuels on the ridge leading to Puu Pane. Additional restrictions, such as prohibiting smoking on

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**TITLE:** Cultural Resources Study for the Preparation of an Environmental Impact Statement, U.S. Army Transformation of the Second Brigade of the 25<sup>th</sup> Infantry Division (Light) to a Stryker Brigade Combat Team, Various Sites, Hawai'i (Revised Draft)

**AUTHOR:** Descantes, Christophe, Ph.D., and David J. Welch, Ph.D., International Archaeological Research Institute, Inc.

**DATE:** February 4, 2003

— *REVISED DRAFT* —

**CULTURAL RESOURCES STUDY FOR THE PREPARATION OF AN  
ENVIRONMENTAL IMPACT STATEMENT  
U.S. ARMY TRANSFORMATION OF THE SECOND BRIGADE OF  
THE 25TH INFANTRY DIVISION (LIGHT) TO A STRYKER BRIGADE  
COMBAT TEAM, VARIOUS SITES, HAWAI'I**

By

Christophe Descantes, Ph.D.  
David J. Welch, Ph.D.

prepared for:

U.S. Army Garrison, Hawai'i  
Schofield Barracks, Hawai'i

under Contract No. DACA65-99-D-0065 with

Tetra Tech, Inc.  
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February 4, 2003

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## STRYKER BRIGADE TRAINING

Training will be conducted at KTA by units of the Stryker Brigade. In general this training will involve the same size of units and the same training activities as are being carried out by the army at KTA currently. However the units will use Stryker vehicles, which have the potential of affecting sites in ways that current maneuvers do not and causing damage to cultural resources. In the absence of constraint maps at present, it is currently assumed that the Stryker vehicles may use all of the base for training. In that case, training at DMR has the potential of adversely impacting the following sites that are potentially eligible for the NRHP (Table 13) as well as yet unidentified sites in areas that have not been surveyed.

Table 13. Potentially eligible sites at KTA that might be impacted by unconstrained Stryker Vehicle Training.

Training Area	State Site No.	Site Type	ID
KTA	50-80-02-0259	spring	Waikane Stone
KTA	50-80-02-0260	heiau	Pu'uala Heiau (4930 terrace facing)
KTA	50-80-02-0599	bunkers	3 bunkers at Punamano Communication Station
KTA	50-80-02-1043	complex	Kawela agricultural terraces
KTA	50-80-02-2357	wall	plantation era stone wall remnant
KTA	50-80-02-2358	single feature	house site 13m x 10m
KTA	50-80-02-2359	2 adj. Terraces	terraces 22.5m x 6m
KTA	50-80-02-2360	single feature	terrace 20m x 10m
KTA	50-80-02-2501	heiau	Hanakoae Platform 4m x 7m
KTA	50-80-02-4881	concrete slab	military octagonal concrete slab (ob. Post) 4m
KTA	50-80-02-4882	bunker	military bunker 8.7m x 4.5m
KTA	50-80-02-4883	historic housesite	plantation era house site
KTA	50-80-02-4884	imu	Imu site 3m
KTA	50-80-02-4885	heiau	Pahipahialua Heiau 17m x 12m
KTA	50-80-02-4886	bunker	pentagonal military bunker 3.5m x 3m
KTA	50-80-02-4887	complex	hab. complex w/ related ag. Features 24m x 14m
KTA	50-80-02-4888	wall/depressions	ag. earthen depressions/rock alignment 20m?
KTA	50-80-02-4930	linear mound	linear rock mound (remnants Site 260?) 7mx2m
KTA	50-80-02-5534	rock shelter	temp. shelter 5m x 2.5m
KTA	50-80-02-5535	burial cave	burial cave 8m x 6m
KTA	50-80-02-5536	rock shelter	temp. shelter? 15m x 3m
KTA	50-80-02-5537	enclosure	enclosure (pre-contact) 62m x 40m
KTA	50-80-02-5538	wall	wall (pre-contact) 15m x 1m
KTA	50-80-02-5539	terraces	retaining wall & stone concentration 40m x 20m
KTA	50-80-02-5540	terraces	terraces 15m x 15m
KTA	50-80-02-5684	enclosure	enclosure 50m x 25m
KTA	50-80-02-5685	rock shelter	temp. shelter 9m x 5m
KTA	50-80-02-5686	ahupua'a boundary	wall 4m x 1m
KTA	50-80-02-5688	roadway	historic roadway 30m x 6m
KTA	50-80-02-5689	bunker	underground bunker 3m x 2m
KTA	50-80-02-5690	enclosure	bunker 4m x 3m
KTA	50-80-02-9506	historic irrigation	Kea'aulu Ditch (hist. stone faced irr. ditch)

Training Area	State Site No.	Site Type	ID
KTA	50-80-02-9507	(historic?) terrace	'O'io Stream terrace (ag. terrace)
KTA	50-80-02-9508	platform	East 'O'io Gulch platform (stepped stone plat.)
KTA	50-80-02-9509	complex	'O'io Gulch complex (ag. terraces)
KTA	50-80-02-9517	terraces	Kanealii agricultural terraces (poss. remnants)
KTA	50-80-02-9745	landmark	'Opana Mobile Radar Site
KTA	temp 1	enclosure	RD-1 military defense enclosure 20m x 15m
KTA	temp 2	enclosure	AD-1 military defense enclosure 8m x 5m
KTA	temp 3	enclosure	AD-4 military defense enclosure
KTA	temp 4	enclosure	SC-1 military defense enclosure 4m x 3.5m
KTA	temp 5	survey marker	SC-2 1927 Bench Mark/Survey Station w/ encl.
KTA	temp 6	survey marker	MR-1 1933 Bench Mark/Survey Station

## KAWAIILOA TA

The Stryker Brigade Combat Team will conduct training at KLOA, but training activities will be restricted to those activities being conducted under current training. Thus the only potential new adverse effects would be those that would accompany increased use of the area.

Archaeological survey has been conducted of selected survey areas within KLOA, primarily in the gulches in the west portion of the project area. Seventy-nine archaeological sites have been identified within KLOA. Several of these sites should be treated as potential traditional cultural properties. Table 14 lists the currently identified sites within KLOA that are potentially eligible for the NRHP.

Table 14. Potentially eligible sites at KLOA.

Training Area	State Site No.	Site Type	ID
KLO	50-80-04-5634	wall complex	3 retaining walls/ 1 align
KLO	50-80-04-5635	single lava tube	lava tube
KLO	50-80-04-5637	single trail	Kawaiioa Trail
KLO	50-80-04-5638	single trail	Ko'olau Summit Trail
KLO	50-80-05-2337	rock shelter	
KLO	50-80-05-2343	complex	
KLO	50-80-05-2344	rock shelter	
KLO	50-80-05-2345	irrigation complex	
KLO	50-80-05-2346	irrigation complex	
KLO	50-80-05-2347	burial cave	
KLO	50-80-05-2348	rock shelter	
KLO	50-80-05-2349	rock shelter	
KLO	50-80-05-2350	rock shelter	
KLO	50-80-05-2351	burial cave	
KLO	50-80-05-2352	rock shelter	
KLO	50-80-05-5605	path, terraces	historic path, dryland agriculture

**TITLE:** Final Environmental Impact Statement  
Transformation of the 2nd Brigade, 25th Infantry  
Division (Light) to a Stryker Brigade Combat  
Team in Hawai'i

**AUTHOR:** U.S. Army, Office of the Secretary of the Army,  
and U.S. Army Corps of Engineers

**DATE:** May 1, 2004



# Final Environmental Impact Statement

## Transformation of the 2nd Brigade, 25th Infantry Division (Light) to a Stryker Brigade Combat Team in Hawai'i

*Prepared for*  
Department of the Army  
Office of the Secretary of the Army  
Washington, DC



and

US Army Corps of Engineers  
Honolulu Engineer District  
Fort Shafter, Hawai'i



*Prepared by*  
Tetra Tech, Inc.  
Honolulu, Hawai'i

May 2004



Table ES-5

## Summary of Impact Levels from the Proposed Action, Reduced Land Acquisition, and No Action

Impact Issue	SBMR			DMR			KTA/KLOA			PTA			Project-Wide Impacts		
	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA
Land use/ Recreation	⊗	○	○	○	○	○	⊗/○	⊗/○	○/○	⊗+	⊗+	○	⊗+	⊗+	○
Visual resources	⊗	⊗	○	⊗	⊗	○	○/○	○/○	○/○	⊗	⊗	○	⊗	⊗	○
Air space	○	○	○	○	○	○	○/○	○/○	○/○	○	○	○	○	○	○
Air quality	⊗	⊗	○	⊗	⊗	○	⊗/○	⊗/○	○/○	⊗	⊗	○	⊗	⊗	○
Noise	⊗*	⊗*	⊗	○	○	○	○/○	○/○	○/○	⊗	⊗	○	⊗	⊗	⊗
Traffic	○	○	○	○	○	○	○/○	○/○	○/○	⊗+	⊗+	○	⊗+	⊗+	○
Water resources	⊗	⊗	○	○	○	○	⊗/○	⊗/○	○/○	○	○	○	⊗	⊗	○
Geology and soils	⊗	⊗	○	⊗	⊗	○	⊗/○	⊗/○	○/○	⊗	⊗	○	⊗	⊗	○
Biological resources	⊗	⊗	○	⊗	⊗	○	⊗/○	⊗/○	○/○	⊗	⊗	○	⊗	⊗	○
Cultural resources	⊗	⊗	○	⊗	⊗	○	⊗/○	⊗/○	○/○	⊗	⊗	○	⊗	⊗	○
Human health & safety hazards	⊗	⊗	○	⊗	⊗	○	⊗/○	⊗/○	○/○	⊗	⊗	○	⊗	⊗	○
Socioeconomics	⊗+	⊗+	○	⊗+	⊗+	○	⊗+/○	⊗+/○	○/○	⊗+	⊗+	○	⊗+	⊗+	○
Utilities	○	○	○	⊗+	⊗+	○	⊗+/○	⊗+/○	○/○	⊗+	⊗+	○	⊗+	⊗+	○

This table summarizes project-wide impacts. For installation-specific impacts see Chapters 5 through 8.

In cases when there would be both beneficial and adverse impacts, both are shown on this table. Mitigation measures would only apply to adverse impacts.

The PA and RLA for SBMR would have a minor increase in noise impacts over the NA. The determination of significance is based on existing NA levels.

LEGEND:

PA = Proposed Action

RLA = Reduced Land Acquisition

NA = No Action

⊗ = Significant impact

⊗ = Significant but mitigable to less than significant impact

○ = Less than significant

○ = No impact

⊕ = Beneficial impact

N/A = Not applicable

### ***Cultural Resource Management Efforts***

The cultural resources management program at USARHAW has a staff that includes a Cultural Resources Manager, six Cultural Resources Specialists (archaeology), and an Architectural Historian. The program covers the followings tasks:

- Complying with federal preservation law;
- Reviewing installation projects to ensure compliance;
- Maintaining a cultural resources database in Access and GIS;
- Conducting field surveys and site evaluations;
- Monitoring cultural resources during training activities;
- Preserving sites;
- Engaging in Native Hawaiian consultation and providing cultural access; and
- Coordinating with other regulatory agencies.

The cultural resources team also coordinates and facilitates public outreach actions that include site tours and public education and forming cultural advisory groups on Hawai'i and O'ahu.

### ***Integrated Wildland Fire Management Plan***

Since the publication of the Draft EIS, the USARHAW finalized the Integrated Wildland Fire Management Plan (IWFMP) (October 2003). As such, discussion of this program was moved from the section describing proposed institutional programs to the section describing existing institutional programs in the Final EIS. The IWFMP lays out specific guidance, procedures, and protocols in the prevention and suppression of wildfires on all USARHAW training lands with wildland fuels. The goal of the plan is to convey the methods and protocols necessary to minimize fire frequency, severity, and size while allowing military units to maintain a high level of combat readiness. The plan defines the responsibilities of all offices, departments, and agencies involved and describes strategic and tactical actions to be taken for pre-suppression and suppression of fires. The plan will be reviewed and updated every other year to ensure the latest information is consistently incorporated into Army wildfire prevention and suppression procedures.

## **2.3 PROPOSED ACTION (PREFERRED ALTERNATIVE)**

Under the Proposed Action, the 2<sup>nd</sup> Brigade would be converted to an SBCT and, as such, would operate as part of the Army's Interim Force. Table 2-3 provides a snapshot comparison of a current force light brigade, such as the 2<sup>nd</sup> Brigade, and the proposed SBCT. Implementing the Proposed Action would require taking several distinct and coordinated actions and activities directly associated with transforming the 2<sup>nd</sup> Brigade. This would include fielding Stryker systems and SBCT-specific weapons, building new facilities, acquiring new land and additional easements, and conducting SBCT-specific training. Table 2-4 provides an overview of the proposed individual project actions by location (Figure 2-7 through Figure 2-11); Table 2-5 shows the proposed projects for each alternative. This EIS

Table 2-3  
**Current Force and SBCT Light Brigade Comparison**

Aspect	SBCT (Proposed Action)	Current Light Brigade (No Action)
Personnel strength	3,818 officers and enlisted <u>Soldiers</u>	3,008 <sup>1</sup> officers and enlisted <u>Soldiers</u>
Vehicles	1,005 emission producing vehicles (including 291 Strykers) <sup>3</sup>	659 emission producing vehicles <sup>2</sup>
Weapons	<u>Current force inventory plus use of twenty-seven 105mm Stryker mounted cannon and thirty-six 120mm mortars and a change from eighteen 105mm howitzers to eighteen 155mm howitzers</u>	Current inventory
Aircraft	<u>Current force inventory</u>	108 helicopters, including the OH58D Kiowa Warrior, UH60 Blackhawk, and CH47 Chinook
Vessels	<u>Current force vessels.</u>	Current inventory of LSVs and barges (For future additions, see Chapter 9, Cumulative Impacts)
Information systems	Computers in every vehicle	Computers in command centers
Communications	Internet	Voice over radio or telephone
Land acquisition	SRAA, WPAA, Dillingham Trail, Helemanō Road, and <u>Kawaihae to PTA Trail</u>	As needed on an individual case-by-case basis
New construction	Seven new ranges, two airfield upgrades, thirteen support facilities, and twenty communication antennas	As needed on a case-by-case basis (see Chapter 9, Cumulative Impacts)
Road improvements	Helemanō Road, Dillingham Trail, and Kawaihae to PTA Trail	As needed on a case-by case-basis (see Chapter 9, Cumulative Impacts)

Source: US Army 2002b

<sup>1</sup>The 3,008 is based on FY04 estimates.

<sup>2</sup>The heaviest vehicles currently used are 5-ton 6-by-6 wheeled cargo trucks.

<sup>3</sup>The 20-ton Stryker is heavier than the light wheeled vehicles currently used because it has armor on it, but it is lighter than other armored vehicles, such as Bradley armored personnel carriers, and also is much lighter than the M1A1 Abrams tank, which weighs 70 tons.



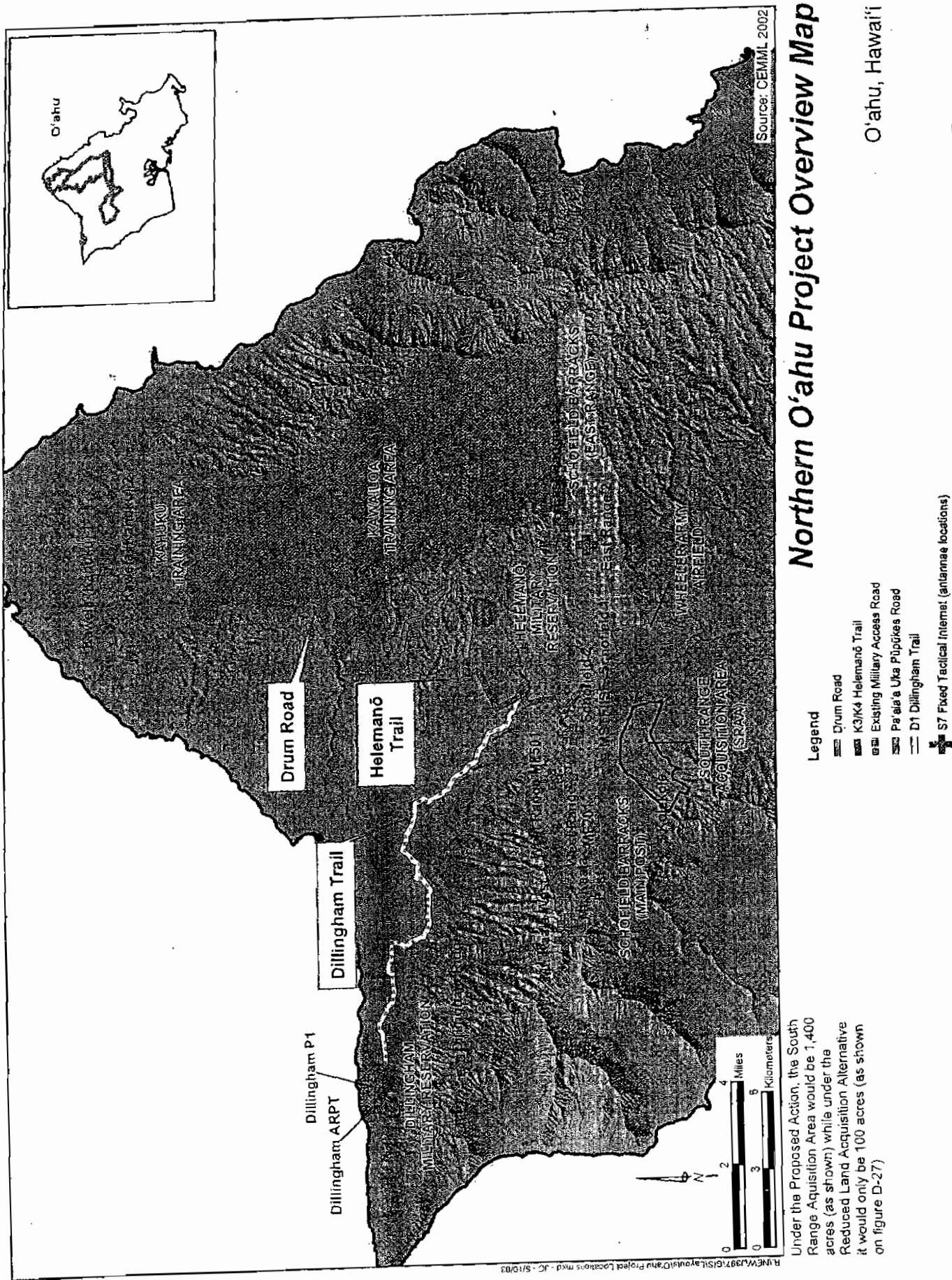
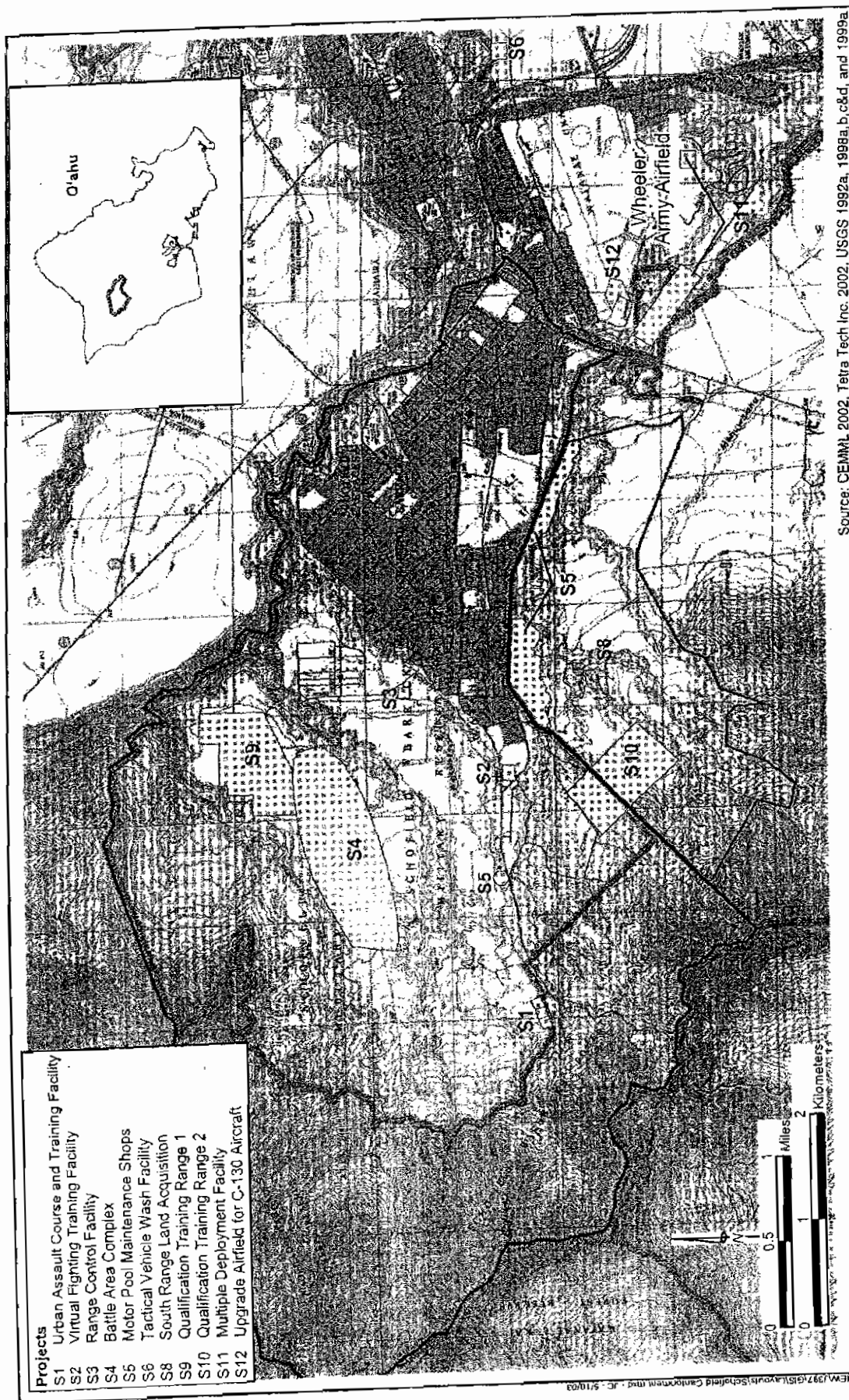


Figure 2-7





**Proposed Action at Schofield Barracks  
Military Reservation and  
Wheeler Army Airfield**  
O'ahu, Hawaii  
Figure 2-8

Proposed action at Schofield Barracks Military Reservation includes the construction of various training and support facilities, the acquisition of additional land, and changes in the training activities and location. S7 Fixed Tactical Internet project sites are shown on Figure 2-7.



## 2. Description of the Proposed Action and Alternatives

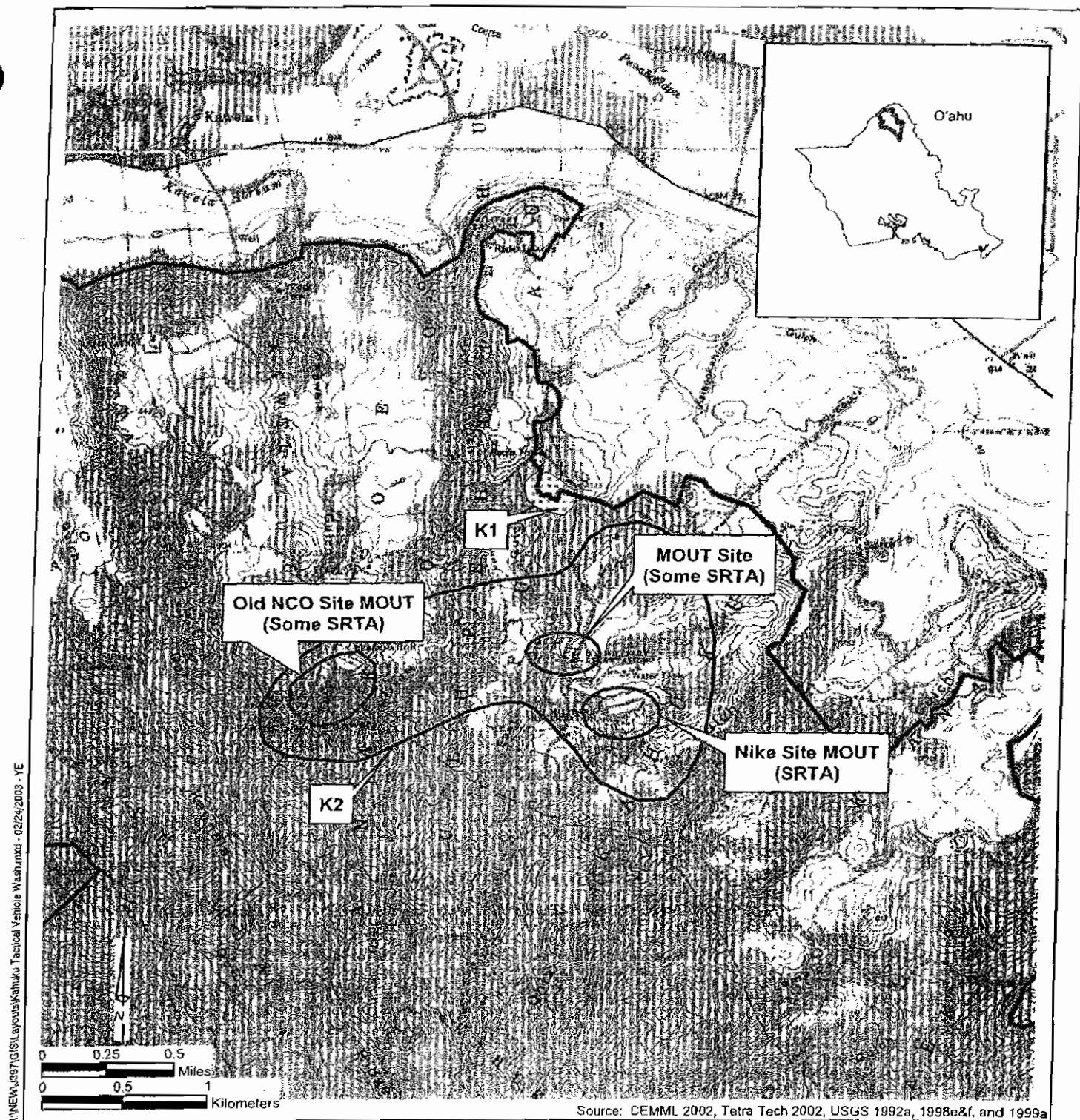
**Table 2-4**  
**SBCT Projects Overview**

Graphics Code <sup>1</sup>	1391 Project #	SBCT Project Title	Location	Construction Commences (Fiscal Year) <sup>2</sup>	Category
S1	58143	Urban Assault Course and Training Facilities	Schofield	2006	Construction
S2	57404	Virtual Fighting Training Facility	Schofield	2009+	Construction
S3	56923	Range Control Facility	Schofield	2009+	Construction
S4	58144	Battle Area Complex	Schofield	2005±	Construction
S5	57421/ 58925	Motor Pool Maintenance Shops	Schofield	2005	Construction
S6	57416	Tactical Vehicle Wash Facility	East Range	2005	Construction
S7	N/A	Fixed Tactical Internet	Schofield	2005	Construction
S8	55270	South Range Land Acquisition	Schofield	2004	Additional Land
S9	57461	Qualification Training Range, QTR1	Schofield (M. Flats)	2004+	Construction
S10	57462	Qualification Training Range, QTR2	Schofield (S. Range)	2005	Construction
S11	57422	Multiple Deployment Facility	Schofield (Wheeler)	2005	Construction, Renovation
S12	57405	Upgrade Airfield for C-130 Aircraft	Schofield (Wheeler)	2002+	Upgrade
D1	58161	Land Easement/Construct Road, SB/DMR	Dillingham	2009+	Construction
K1	57415	Tactical Vehicle Wash Facility	Kahuku	2007	Construction
K2	57305	Combined Arms Collective Training Facility	Kahuku	2005	Construction, Renovation
K3	57406	Road Construction, Schofield to Helemanō	Helemanō	2005	Construction
K4	57802	Land Easement, Schofield to Helemanō	Helemanō	2004	Additional Land
P1	57197	Battle Area Complex	Pōhakuloa	2007	Construction
P2	57183	Anti-armor Live-fire and Tracking Range	Pōhakuloa	2009+	Construction
P3	58273	Construct Military Vehicle Trail, PTA-Kawaihae	Pōhakuloa	2009±	Construction
P4	58273	Land Easement for Military Vehicle Trail, PTA-Kawaihae	Pōhakuloa	2009+	Additional Land
P5	57417	Ammunition Storage	Pōhakuloa	2009+	Construction
P6	57414	Tactical Vehicle Wash Facility	Pōhakuloa	2006	Construction
P7	57411	West PTA Maneuver Training Area Land Acquisition	Pōhakuloa	2005	Additional Land
P8	56994	Range Maintenance Facility	Pōhakuloa	2009+	Construction
P9	57408	Runway Upgrade/Extension, Bradshaw AAF	Pōhakuloa	2009+	Renovation
P10	N/A	Fixed Tactical Internet	Pōhakuloa	2005	Construction
P11	N/A	Installation Information Infrastructure Architecture	Pōhakuloa	2005	Construction

Source: US Army 2002a

<sup>1</sup>Graphics code refers to the project locations shown on figures in Chapter 2 and in Appendix D.<sup>2</sup>Fiscal Year is based on current program guidance subject to change as a result of future funding availability.





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The project locations at KTA are the same for both the Proposed Action and Reduced Land Acquisition Alternative. The proposed CACTF includes renovation of existing buildings at the old NCO Site and new construction at the other two MOUT sites.

#### Legend

- K2 Combined Arms Collective Training Facility
- K1 Tactical Vehicle Wash Facility
- Kahuku Training Area Boundary

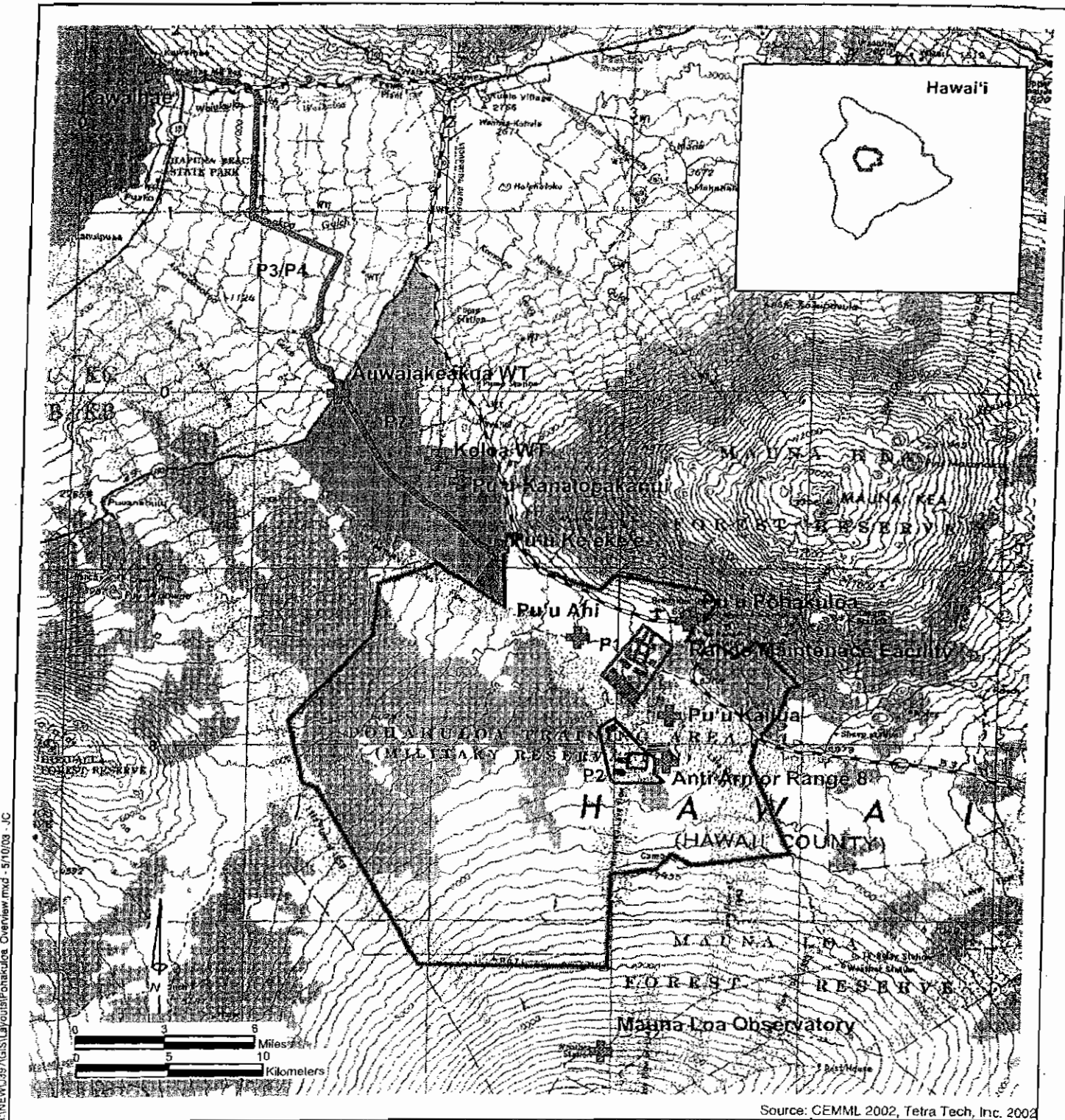
## Project Locations at Kahuku Training Area

O'ahu, Hawai'i

**Figure 2-9**



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Source: CEMML 2002, Tetra Tech, Inc. 2002

Qualification Training Range 2 would not be constructed at PTA under the Proposed Action but would be under the Reduced Land Acquisition Alternative. This is the only difference at PTA between the two alternatives.

### Legend

- |   |                                |
|---|--------------------------------|
| Pōhakuloa Training Area Boundary                    | Qualification Training Range 2 |
| P1 Battle Area Complex                              | 1010 Land Acquisition Area     |
| P2 Anti-Armor Live-fire and Tracking Range          | P10 Fixed Tactical Internet    |
| P3/P4 Pōhakuloa to Kawaihae Trail                   | Main Road                      |
| P7 West PTA Maneuver Training Area Land Acquisition |                                |

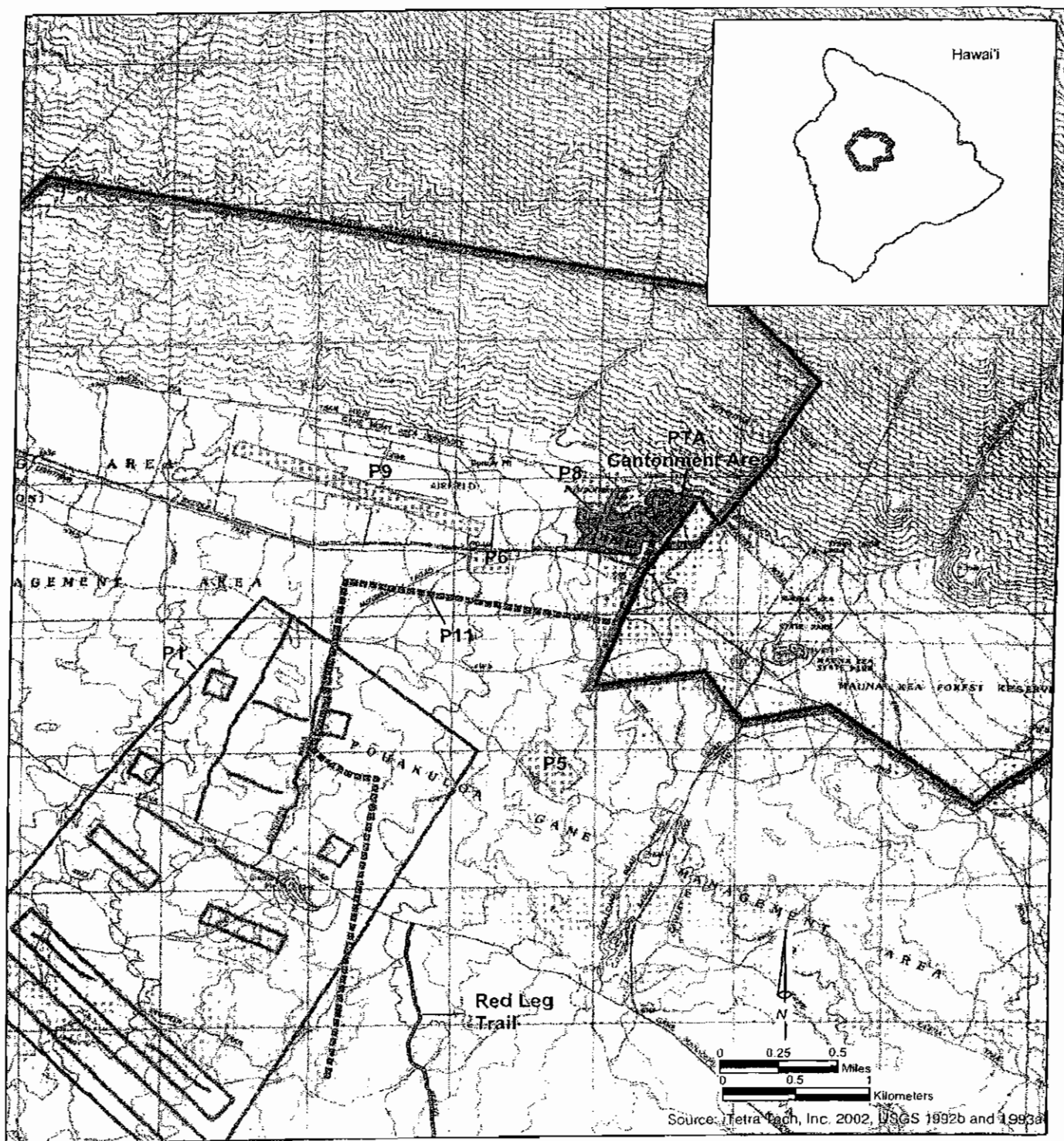
## Pōhakuloa Project Overview

Island of Hawai'i, Hawai'i

Figure 2-10



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## Cantonment Area Projects at Pōhakuloa Training Area

Pōhakuloa, Hawai'i

**Figure 2-11**

2-29

0051314



## 2. Description of the Proposed Action and Alternatives

Table 2-5  
Proposed Action (Preferred Alternative), Reduced Land Acquisition Alternative, and No Action Alternative Overview

	Proposed Action (Preferred Alternative)	Reduced Land Acquisition Alternative	No Action Alternative
Training	None.	Same as Proposed Action.	Same as Proposed Action.
Live-fire exercises	None.	Same as Proposed Action.	Same as Proposed Action.
Vehicle use	Current use of the area for training purposes. Vehicles in the area are used for training purposes. Vehicles in the area are used for training purposes.	Current use of the area for training purposes. Vehicles in the area are used for training purposes. Vehicles in the area are used for training purposes.	Current use of the area for training purposes. Vehicles in the area are used for training purposes. Vehicles in the area are used for training purposes.
Original mission (training)	Current use of the area for training purposes. Vehicles in the area are used for training purposes. Vehicles in the area are used for training purposes.	Current use of the area for training purposes. Vehicles in the area are used for training purposes. Vehicles in the area are used for training purposes.	Current use of the area for training purposes. Vehicles in the area are used for training purposes. Vehicles in the area are used for training purposes.
Weapons used	Current use of the area for training purposes. Weapons in the area are used for training purposes. Weapons in the area are used for training purposes.	Current use of the area for training purposes. Weapons in the area are used for training purposes. Weapons in the area are used for training purposes.	Current use of the area for training purposes. Weapons in the area are used for training purposes. Weapons in the area are used for training purposes.
Access and egress	Current use of the area for training purposes. Access and egress are used for training purposes. Access and egress are used for training purposes.	Current use of the area for training purposes. Access and egress are used for training purposes. Access and egress are used for training purposes.	Current use of the area for training purposes. Access and egress are used for training purposes. Access and egress are used for training purposes.
Young vegetation	Current use of the area for training purposes. Young vegetation in the area is used for training purposes. Young vegetation in the area is used for training purposes.	Current use of the area for training purposes. Young vegetation in the area is used for training purposes. Young vegetation in the area is used for training purposes.	Current use of the area for training purposes. Young vegetation in the area is used for training purposes. Young vegetation in the area is used for training purposes.
Wildlife	Current use of the area for training purposes. Wildlife in the area is used for training purposes. Wildlife in the area is used for training purposes.	Current use of the area for training purposes. Wildlife in the area is used for training purposes. Wildlife in the area is used for training purposes.	Current use of the area for training purposes. Wildlife in the area is used for training purposes. Wildlife in the area is used for training purposes.
Vegetation	Current use of the area for training purposes. Vegetation in the area is used for training purposes. Vegetation in the area is used for training purposes.	Current use of the area for training purposes. Vegetation in the area is used for training purposes. Vegetation in the area is used for training purposes.	Current use of the area for training purposes. Vegetation in the area is used for training purposes. Vegetation in the area is used for training purposes.
Land acquisition	Current use of the area for training purposes. Land acquisition in the area is used for training purposes. Land acquisition in the area is used for training purposes.	Current use of the area for training purposes. Land acquisition in the area is used for training purposes. Land acquisition in the area is used for training purposes.	Current use of the area for training purposes. Land acquisition in the area is used for training purposes. Land acquisition in the area is used for training purposes.
Construction	Current use of the area for training purposes. Construction in the area is used for training purposes. Construction in the area is used for training purposes.	Current use of the area for training purposes. Construction in the area is used for training purposes. Construction in the area is used for training purposes.	Current use of the area for training purposes. Construction in the area is used for training purposes. Construction in the area is used for training purposes.
Infrastructure	Current use of the area for training purposes. Infrastructure in the area is used for training purposes. Infrastructure in the area is used for training purposes.	Current use of the area for training purposes. Infrastructure in the area is used for training purposes. Infrastructure in the area is used for training purposes.	Current use of the area for training purposes. Infrastructure in the area is used for training purposes. Infrastructure in the area is used for training purposes.
Other	Current use of the area for training purposes. Other in the area is used for training purposes. Other in the area is used for training purposes.	Current use of the area for training purposes. Other in the area is used for training purposes. Other in the area is used for training purposes.	Current use of the area for training purposes. Other in the area is used for training purposes. Other in the area is used for training purposes.

Source: US Army 2002a

## 2. Description of the Proposed Action and Alternatives

analyzes only the conversion of the 2<sup>nd</sup> Brigade to an SBCT and not its ultimate conversion to the future force; a separate NEPA analysis would be done for that next phase as appropriate. Major elements of the SBCT include the following:

- Three Motorized Infantry Battalions, each composed of three Combined Arms Rifle Companies and a Headquarters Company;
- Reconnaissance, Surveillance, and Target Acquisition Squadron (RSTA);
- Antitank Company;
- Field Artillery Battalion;
- Aviation Task Force;
- Engineer Company;
- Brigade Support Battalion;
- Brigade Headquarters and Headquarters Company;
- Signal Company; and
- Military Intelligence Company.

Each major element of the SBCT is composed of a number of smaller units. Individual training activities often consist of section-, team-, squad-, and platoon-sized units operating in a dispersed but coordinated manner. Despite some changes in equipment, capability, and training doctrine, training activities are anticipated to be very similar to those currently conducted by light infantry brigades stationed on and training on O'ahu and the island of Hawai'i. However, the number of Soldiers is expected to increase by 810 and the total number of rounds to be fired by all Soldiers trained at USARHAW by 25 percent. This would increase overall training throughput, which would necessitate the construction and update of ranges and facilities to meet the SBCT training requirements. The addition of the Stryker and the need for increased mounted maneuver training would require the acquisition of additional lands.

After the publication of the EIS, the Army announced plans for an enhancement package for SBCTs. The enhancements include an aviation task force, an increase from twelve to eighteen 155mm howitzers in the direct support artillery battalion, and improvements to command, control, communications, computer, and intelligence (C4I) assets. The announcements indicated that the aviation task force would include Comanche helicopters when the aircraft were ready for fielding. In February 2004, the Army determined that no further testing or fielding of Comanches would occur and canceled the Comanche program. The SBCT aviation task force will come from existing 25th ID(L) aviation brigade assets and will result in minor changes to training, primarily some increased aviation training over WPAA in support of units training in that area. The FEIS has analyzed the impacts of the increased aviation training over WPAA and those impacts are minimal. The EIS analyzed the impacts of twelve 155mm howitzers, a change from the 18 105mm howitzers currently in the direct support artillery battalion for 2nd brigade. The addition of another six 155mm howitzers was analyzed in the FEIS and resulted in minimal changes to noise impacts and no

## 2. Description of the Proposed Action and Alternatives

change in the overall determination of effect. The C4I improvements are not expected to have any impacts on the environment.

Overall, the Army has determined that the enhancements are within the original scope of the Proposed Action as described in the EIS, are minor, and do not require a supplemental EIS.

An evaluation of training facilities shows that they do not provide the necessary opportunities for training an SBCT (Nakata Planning Group 2002a). Under this alternative, training capabilities would be enhanced as part of transforming the 2<sup>nd</sup> Brigade to an SBCT. The Army's proposed changes to training would rectify training resource shortfalls for SBCT units and would reorient resources to meet evolving mission-related requirements. In order to meet present and future missions, USARHAW units must have modernized maneuver areas, training facilities, and other support facilities, such as infrastructure and telecommunications.

In selecting specific construction projects to meet the training shortfall for SBCT and to minimize costs and impacts on the environment and communities, planners attempted to first use existing USARHAW lands and ranges, where possible, to upgrade existing ranges and facilities, to build new ranges on existing training areas, and, if necessary, to acquire new training lands. Once project alternatives were developed, they were further evaluated and selected based on the following factors: the extent to which they provided mission support; the extent to which they minimized environmental impacts and contributed to environmental stewardship; their economic feasibility; and the extent to which they increased training productivity. Each final site location was further adjusted as necessary to avoid or minimize impacts on natural and cultural resources.

An SBCT deploys very rapidly, executes early entry, and conducts effective combat operations immediately on arrival to prevent, contain, stabilize, or resolve a conflict. An SBCT participates in major war as a subordinate component within a division or corps, in a variety of possible roles. To deploy rapidly, the brigade's design uses a highly mobile, medium-weight armored combat/combat support platform, with a minimum of personnel and logistical support. Preconfigured in ready-to-fight combined arms packages, the entire SBCT can be deployed anywhere in the world and can begin operations within 96 hours of deployment. Once in the field, the SBCT can self-deploy up to 500 miles in a 12-hour period and can sustain operations for up to 72 hours without resupply. SBCT description, operations, and capabilities are largely derived from the SBCT organizational and operational concept (HQDA 2000). The SBCT is organized primarily as a combined arms, mounted infantry organization. The Stryker Infantry Carrier Vehicle (ICV) serves as the platform for infantry carriers, mobile gun systems, mortars, reconnaissance, surveillance, and target acquisition elements, anti-rank carriers, engineer mobility support vehicles, nuclear/biological/chemical reconnaissance, as well as many of the command and control carriers within the brigade. As a supporting brigade to a light division, the SBCT extends the tactical mobility available to the division commander and increases the firepower available to support dismounted infantry assaults. The typical size and composition of each element of a brigade is presented in Table 2-2.



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## 2.3.1 SBCT Systems Fielding

This element of the Proposed Action involves fielding new and modernized vehicles, weapons systems, and equipment for Interim Forces and, ultimately, the future force, although there will be some upgrades, changes and additions.

Foremost among the new systems is the Stryker, an eight-wheeled, 23-foot (7-meter) long, 9-foot (3-meter) wide, 20-ton (18-metric ton) combat vehicle that can be transported on the C-130 aircraft. The Stryker vehicle has a 350-horsepower Caterpillar Model 3126 diesel engine and can travel at a maximum speed of 60 miles per hour for 330 miles on one full tank of fuel. It represents a substantial improvement in strategic mobility for brigade-sized units and can be designed to accomplish several different tasks. The primary design of the Stryker has two variants: the ICV and the mobile gun system (MGS). The ICV (Photo 2-1) can carry nine Soldiers and their equipment and requires a driver and a vehicle commander. The MGS (Photo 2-2) would be mounted on the Stryker and modified to incorporate a 105mm turreted cannon and autoloader system with a crew of three. Twenty-seven of the 291 Strykers would be MGSs. The actual vehicle used by SBCT may vary from the current Stryker vehicles as the system is developed, but overall will have the same characteristics as the current Stryker. (There are eight other configurations of the Stryker that could be used as part of the SBCT; information on the ICV, MGS, and the eight other Stryker variants is provided in Appendix C.)

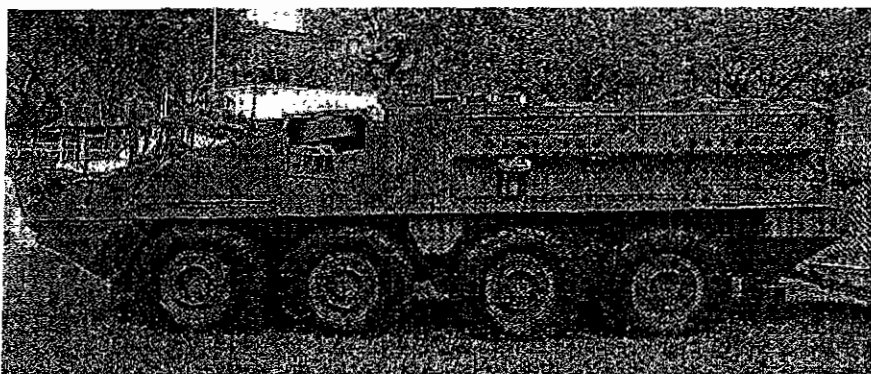


Photo 2-1. Stryker infantry carrier vehicle.

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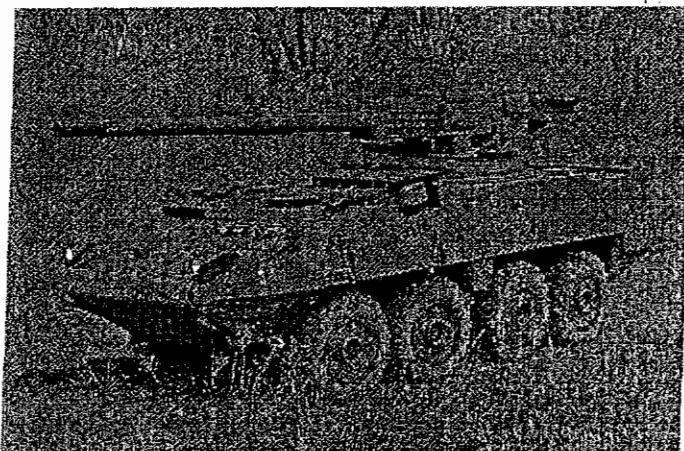


Photo 2-2. Stryker with MGS mounted on top.

If the design of the Stryker or other vehicles used in SBCT are changed in such a manner as to result in a significant environmental impact not analyzed in this document, the Army would conduct appropriate NEPA analysis and would comply with all appropriate laws and regulations prior to implementation. In this study, the Army would analyze the potential for significant impacts on those resource areas that could be affected by the design change.

The SBCT would be equipped with a tactical unmanned aerial vehicle (UAV) similar to the RQ-7A "Shadow 200" (Photo 2-3) to provide day or night reconnaissance, surveillance, and target acquisition capability. The UAV can be likened to a large radio controlled model airplane. The UAV would allow tactical commanders a view into heavily protected battle space that could not be penetrated by other intelligence assets or that presents a high risk to piloted aircraft. Each UAV system includes three unpiloted aircraft equipped with imagery sensors, a ground vehicle to carry the aircraft, two ground control stations mounted on vehicles, and launch, recovery, and support equipment pulled on trailers behind the vehicles. The aircraft weighs approximately 325 pounds, has a wingspan of 13 feet (4 meters), and measures 11 feet (3.4 meters) from nose to tail.



Photo 2-3. Shadow unmanned aerial vehicle launch.

## 2. Description of the Proposed Action and Alternatives

Barges and logistic support vessels (LSV) are currently used for transporting equipment and troops from Pearl Harbor to Kawaihae Harbor for training at PTA. LSV trips would increase by 6 per year, a 10 percent increase under SBCT. New high-speed theater support vessels (TSV) may replace the LSV in the future. Before the TSVs are fielded appropriate NEPA documentation will be prepared including ESA and NHPA consultation if required. The potential impacts of the TSV are discussed in Chapter 9 under cumulative impacts.

The weapons systems in the SBCT would be the same as currently used by, or proposed for, existing units in the 25<sup>th</sup> ID (I) or the Hawai'i Army National Guard, with the exception of the introduction of the 105mm MGS on the Stryker and the 120mm mortar and an increase of from 12 to 18 155mm howitzers.

### 2.3.2 Construction

Proposed construction includes building, modernizing, and remodeling buildings, training facilities (e.g., live-fire training facilities), and infrastructure and demolishing buildings and facilities. It also involves ground softening at the PTA Battle Area Complex (BAX) and anti-armor live-fire and tracking range (AALFTR) by using a D-10 bulldozer that will drive back and forth over areas on the ranges to crush lava, large rocks, and hard soil to provide a softer substrate for Soldiers to train. Both of these ranges are constructed over existing ranges, so ground-softening activities would occur as needed on already heavily disturbed areas. The precise location and extent of ground softening would depend on final orientation of firing points and targets but is expected to cover a fraction of the 2,825-acre (1,143-hectare) area of the two ranges.

Proposed construction also includes Dillingham Trail, Helemanō Trail, and PTA Trail on land to be acquired as described in Section 2.3.3. Of the 25 locations evaluated for construction of the Fixed Tactical Internet antennas on O'ahu and Hawai'i, a maximum of eight will be selected on each island from the locations represented in the EIS. Locations will be chosen based on the most suitable locations for communication logistics and avoidance of environmental concerns, such as cultural and biological resources. See Table 2-4, Figures 2-7 to 2-11, and Appendix D for details on the construction projects.

### 2.3.3 Land Acquisition/Easements

This part of the Proposed Action involves real property acquisition, which means negotiating temporary or permanent control of property for Army use, mainly through purchase, lease, or permit. Under the Proposed Action, two areas would be acquired and three easements would be obtained. The two areas identified for acquisition are the South Range Acquisition Area (SRAA) (approximately 1,402 acres [567 hectares]) at SBMR and the West PTA Acquisition Area (WPAA) (approximately 23,000 acres [9,308 hectares]). These parcels were selected because of their proximity to existing installations. The parcels' acreages would provide enough land for new facilities and, when combined with existing installations, adequate acreages for mounted maneuver training.

After it has acquired WPAA, the Army plans to construct about 28 miles of gravel training roads, the location of which are as yet underdetermined. The Army would comply with all applicable environmental statutes, including but not limited to NEPA, the ESA, and the



## 2. Description of the Proposed Action and Alternatives

NHPA, in determining the location and potential impacts of these roads before construction. The Army would also consult with adjacent property owners and other interested parties on the location of the proposed training roads in order to address and resolve potential air quality and dust concerns.

Although the SRAA would become part of SBMR it is different from the existing South Range, which includes several existing qualification ranges and is just north of the proposed SRAA. The three easements for military vehicle trails would include the trails between SBMR and DMR (known as the Dillingham Trail, 36 acres (14.6 hectares), between SBMR and HMR (known as the Helemanō Trail, 13 acres (5.3 hectares), and between Kawaihae Harbor and PTA (known as the PTA Trail, 132 acres (53.4 hectares). While the Army would not own the underlying land, the easement is a property right to the land. Until trail construction is complete, the Army would use public roads for travel from SBMR to DMR and KTA, and from Kawaihae to PTA. See Figure 2-8 and Appendix D for maps and more details on the land acquisition projects.

#### 2.3.4 SBCT Training

The following subsections describe the SBCT training that would occur under the Proposed Action, with emphasis on the differences between SBCT training and the current force training. Most of the nonlive-fire and other training that does not involve maneuvers by SBCT forces would be similar to that currently being conducted by the 25<sup>th</sup> ID (L). As with current force training, exercises would continue to be at the squad through company level, with some opportunities for battalion and above training. Urban operations training is more highly emphasized in SBCT requirements. The SBCT would use new urban warfare facilities extensively and would use existing helicopter landing and pickup zones. Nonlive-fire training also is conducted in classrooms, on rappel towers, and obstacle courses, and in a variety of specialized facilities. Table 2-6 compares training under the Proposed Action and No Action Alternatives, and Table 2-7 compares military vehicular traffic between training areas. Table 2-9, under Requirements for SBCT, lists the minimum number of days of training that would take place for specific training.

Doctrine that has thus far been developed for the SBCT may be refined, based on experience following initial operating capability of the unit.

#### *Mounted Maneuver Training*

Doctrine provides that the area of operations for which the SBCT could be responsible in combat is normally 31 miles by 31 miles (50 kilometers by 50 kilometers) (Nakata 2002b). On the premise that the Army must train as it intends to fight, the training lands must be sufficient and widely spread to approximate operating in an area that size by simulating the density of units and activities that might occur during combat.



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Table 2-6  
Summary of Training Activities by Installation

Training Area	Proposed Action						No Action					
	Training on Land (Includes night training)			Aviation Training			Training on Land (Includes night training)			Aviation Training		
	Maneuver Acreage	Live-Fire	Maneuver	Arboreal (Parachute Drops)	Helicopters	UAV Operations (Daylight)	C17/C130 Aircraft Operation	Mounted	Dismounted	Live-Fire	Maneuver	Arboreal (Parachute Drops)
SBNR												
Main Post	0	1,235	Bde									
SBLR	2,223	2,223	Co									
WAAF	0	494 <sup>3</sup>	n/a									
SRAA	1,300	1,300	Plt									
DMR	354	354	Co									
KTA	4,569	4,569	Bde									
KLOA <sup>2</sup>	0	5,310	Co									
PTA												
PTA Main	18,000	56,661	Bde									
WPAA	23,000	23,000	Bde									
Notes:												

<sup>1</sup>SRTA only

<sup>2</sup>Mounted maneuver training would take place along Drum Road in transit to KTA.

<sup>3</sup>Although dismounted maneuver acreage is available, this training is not currently conducted at WAAF.

<sup>4</sup>Current mounted and dismounted maneuver training at WPAA is done on a training event basis by individual lease agreement.

Co = Company

Plt = Platoon

Bn = Battalion

Bde = Brigade

n/a = Not applicable/activity does not occur

☒ = Activity occurs or will occur

Note: RJA Alternative has the same training activities as the Proposed Action, with the exception of no live-fire weapons qualification and no off-road maneuvers at SRAA.

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**Table 2-7**  
**Estimated Military Vehicle Traffic Between Schofield and**  
**Dillingham and Kahuku, and Between Kawaihae and PTA**

SBMR-DMR				SBMR-KTA				Kawaihae-PTA				DMR-KTA <sup>2</sup>			
Vehicles Per Convoy	Number of Convoys	% Trail-Roadway Split <sup>1</sup>	Annual Frequency	Vehicles per Convoy	Number of Convoys	% Trail-Roadway Split <sup>1</sup>	Annual Frequency	Vehicles per Convoy	Number of Convoys	% Trail-Roadway Split <sup>1</sup>	Annual Frequency	Vehicles per Convoy	Number of Convoys	Annual Frequency	
Company Level Exercises															
Current															
Trucks and HMMWVs	15	1	All road	4	15	1	All Road	12	0	0	N/A	0	5	1	1
SBCT															
Strykers	11	1	90/10	4	11	1	90/10	12	0	0	N/A	0	0	0	0
Trucks and HMMWVs	6	1	60/40	4	16	1	60/40	12	0	0	N/A	0	5	1	1
Battalion Level Exercises															
Current															
Trucks and HMMWVs	0 <sup>3</sup>	0	0	0	24	2	All Road	3	24	3	All Road	2	0	0	0
SBCT															
Strykers	11	1	90/10	4	24	2	90/10	4	24	3	90/10	2	0	0	1
Trucks and HMMWVs	6	1	60/40	4	24	2	60/40	4	24	2	60/40	2	8	1	0
Brigade Level Exercises															
Current															
Trucks and HMMWVs	24 <sup>3</sup>	8	All Road	2	24	11	All Road	1	24	10	All Road	2	24	3	1
SBCT															
Strykers	6	1	90/10	1	24	1	90/10	1	24	12	90/10	2	0	0	0
Trucks and HMMWVs	24	8	60/40	1	24	2	60/40	1	24	21	80/20	2	24	3	1

Notes:

<sup>1</sup>Split between trails and public roadway estimated as a worst case for public roadway travel.<sup>2</sup>Travel would be entirely on public roadways.<sup>3</sup>Current force would not conduct multi-location exercise.

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Prior Army training doctrine called for using large areas of contiguous maneuver land. This would be preferable if available, but the advent of advanced communication makes it possible for the SBCT to train on noncontiguous parcels of land, even on separate islands, and still simulate operating in a 31-mile by 31-mile (50-kilometer by 50-kilometer) area. For example, while the entire SBCT cannot train within the WPAA, all squad, platoon, company, battalion, and a portion of the brigade tasks can be accomplished there. Only nonlive-fire maneuver training will be done in the WPAA. All training in the WPAA will be supported from PTA. Table 2-8 gives the 2002 land use requirements study (LURS) acreages for existing maneuver land available to the Army in Hawai'i (US Army 1997c). The table shows that a total of 34,637 acres (14,017 hectares) of suitable training land is available to USARHAW units for dismounted and mounted training. (Other lands are unsuitable for a variety of reasons, because they include cantonment areas, are too steep, or are set aside for environmental reasons.)

Table 2-8  
Existing Maneuver Land (in acres)

Training Area	Suitable Terrain
SBMR	1,235 (500 hectares)
SBER	2,223 (900 hectares)
WAAF	494 (200 hectares)
MMR	1,034 (418 hectares)
DMR	354 (143 hectares)
KLOA	5,310 (2,149 hectares)
KTA	4,569 (1,849 hectares)
PTA	56,661 (22,930 hectares)
Total	71,880 (29,089 hectares)

Source: Land Use Requirements Study (US Army 1997c)

The RTLP Range Development Plan (RDP) describes the land required for individual maneuvers necessary to meet the training requirements for combat within a 31-mile by 31-mile (50-kilometer by 50-kilometer) area (Nakata Planning Group, LLC 2002a). By looking at the amount of land required to support these individual maneuvers the total maneuver lands needed can be determined. The largest of these maneuvers is the semiannual "movement to contact" exercise for the SBCT as a whole, which requires 122,564 acres (49,600 hectares). The same maneuver at the battalion level is to be conducted four times per year and requires only half as much land (61,284 acres [24,801 hectares]).

The Proposed Action encompasses two land acquisitions that would increase the amount of maneuver land available: the South Range land acquisition of approximately 1,402 acres (567 hectares), approximately 1,300 acres (526 hectares) of which would be used for maneuver, and the West PTA maneuver training area land acquisition of up to 23,000 acres (9,308 hectares). These land acquisitions would add up to 24,300 acres (9,834 hectares) to the inventory of 71,880 acres (29,089 hectares) of existing maneuver lands shown in Table 2-8, bringing the total available to 96,180 acres (38,923 hectares). This is approximately 78

## 2. Description of the Proposed Action and Alternatives

percent of the goal, which, when combined with training available along the proposed military use trails, will meet mounted maneuver training needs. Although the most notable physical difference between the current force and SBCT forces is the introduction of the Stryker vehicle, operations and capabilities would also change. The Stryker vehicle is primarily a troop transport vehicle that would traverse terrain and obstacles to ensure protected delivery of infantry squads to their dismount points. Because of the limitations of the Stryker, most mounted movement takes place on roads or unrestricted terrain. The Stryker can maneuver across a slope that is less than 30 percent, up a slope that is less than 60 percent, and over trees less than five inches (13 centimeters) in diameter. In addition, the Stryker would not be allowed in areas subject to other restrictions, such as those containing sensitive species or cultural features resources. The number of Strykers involved in training exercises would depend on the capacity of the training area involved. All 1,005 emission-producing vehicles (including 291 Strykers) would be based at SBMR and would deploy for training as required. Mounted maneuver training at the South Range Acquisition Area would involve from one to 96 Strykers, one to 27 at DMR, one to 96 at KTA, and 32 to 192 at PTA. There would be no mounted maneuvers in KLOA, except along Drum Road.

#### ***Dismounted Maneuver Training***

As described above, Strykers would rapidly transport troops to a predetermined action area, where they would conduct dismounted maneuvers to train for enemy engagement. At times, training may include only dismounted maneuvers without the Stryker. During dismounted maneuvers Soldiers would walk in dispersed groups overland toward a given objective. During simulated engagement, Soldiers would seek cover or concealment, and one section may provide a base of weapons fire, while another maneuvers toward the objective.

During extended maneuver training, Soldiers may sleep in the field. To allow for quick deployment, they would not set up tents. Training may involve live-fire and nonlive-fire exercises. Nonlive-fire exercises use blank ammunition, laser weapons, and simulated artillery and mortar fire with pyrotechnics. During nonlive-fire training there would be no aerial pyrotechnics allowed. If used, helicopters would land in established landing zones.

#### ***Reconnaissance Training***

Reconnaissance training would be carried out in a similar manner as the current force reconnaissance training, except that UAVs would provide air reconnaissance that, in combination with ground reconnaissance, would provide situational awareness and knowledge throughout a larger area.

It is anticipated that the UAV's total flying hours would amount to 2,400 hours of flight per year (4 UAVs at 600 hours per year), or 600 takeoffs and landings per year. The UAVs would not need to take off from or land at ordinary airfields but could be launched from any location using their own hydraulic launchers. An arrested recovery system using nets and/or cables would also be used, minimizing the area required for launch and recovery. Due to this mobility, most of the launch and recovery sites would be within the existing restricted airspace on O'ahu and the island of Hawai'i. However, launching from WAAF or BAAF may be desired for routine training and maintenance. Before such training and maintenance flights, the Army would coordinate with and obtain approval from the Federal Aviation



## 2. Description of the Proposed Action and Alternatives

Administration (FAA). UAVs would not be launched or recovered at DMR, KTA, KLOA or West PTA, although they would be flown over KTA and WPAA under visual ground monitoring.

### **Live-Fire Training**

The transformed brigade would use new and existing live-fire ranges and firing points. SBCT units would perform individual weapon and combined arms live-fire training. Use of pyrotechnics, obscurants, and simulators is anticipated to be similar to current force use. All SBCT training would be planned and conducted in accordance with established USARHAW range and training land regulations and standard operational procedures (SOPs). The SBCT would use the same weapons and explosives as the current force, with the addition of the 105mm mobile gun system on the Stryker and the 120mm mortar and a change from 12 105mm howitzers to 18 155mm howitzers. All current forces at USARHAW use approximately 16 million rounds and individual explosives per year at the various ranges in Hawai'i. SBCT forces with a current force Brigade would use approximately 20 million rounds and individual explosives per year as part of SBCT training, an increase of 25 percent. No live-fire training would be conducted at WAAF, KLOA, DMR or WPAA. Table 2-9 compares the ammunition used for the Proposed Action to the No Action Alternative.

Table 2-9  
Comparison of Ammunition Use

Ammunition	No Action	PA
HE Artillery (>40 mm)	17,952	22,434
Non-HE Artillery (>40 mm)	174,520	284,390
Mortar Rounds (60, 81, 120 mm)	6,836	14,022
Non-HE Mortar Rounds (60, 81, 120 mm)	11,740	18,176
Rockets	44	44
Mines	1,088	1,087
Demolition/Breeching Charges	283,675	205,229
Standard Live Ammunition (Small Arms)	7,297,358	9,314,025
Tracer Rounds (Small Arms)	2,807,282	4,051,655
Blanks/SRTA Rounds (Small Arms)	3,738,584	5,127,061
Pyrotechnics	588,380	91,955
Fuses	575,378	120,248

Existing military operations on the urban terrain assault course at SBMR are inadequate to satisfy the SBCT training requirements for the Stryker MGS, light armored vehicle and reconnaissance armored vehicle because it does not have an urban assault course training facility (UACTF), breach facility, or live-fire shoot house. The proposed UACTF at SBMR would provide facilities to train Soldiers in the proper techniques associated with urban combat. These exercises would be conducted with mobile support. The BAX is proposed to provide a realistic battle area for company-level infantry units (dismounted or with supporting vehicles) in need of live-fire training required for an SBCT, which does not exist on O'ahu and the island of Hawai'i. QTR1 is proposed at SBMR to allow consolidation of small arms qualification training that currently is spread across a wide area, requiring units to

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occupy numerous antiquated ranges. Ranges for modified record fire and combat pistol qualification on SBMR are nonstandard and conflict with higher priority ranges or other proposed ranges. The construction of QTR2 would eliminate this conflict and would provide a modern training facility. A special use airspace, called a controlled firing area (CFA), would be established above QTR2 to contain activities that, if not conducted in a controlled environment, would be hazardous to nonparticipating aircraft. Hawai'i-based units lack a large range to train Soldiers in an urban environment under simulated conditions. The proposed CACTF at KTA would provide a 24 building, SRTA live-fire, facility and range operation support facility to fill that need.

A BAX is proposed at PTA to provide brigade-level CALFEXs not found in Hawai'i. The BAX would provide for gunnery training for MGS, armored vehicle training, or armored vehicle reconnaissance vehicles. Construction at PTA allows enough space for brigade-level CALFEXs that cannot be conducted at SBMR. There currently is no range for anti-armor live-fire and tracking training, which is necessary for supporting Strykers and anti-armor forces firing from HMMWVs. The AALFTR would enable individual and collective gunnery training that simulates sweeping gunfire during movement along the flank of an opposing force.

#### ***Service Support Operations and Training***

There would be no change in service support operations and training under the Proposed Action. Training would be carried out in a manner similar to current force training.

#### ***Deployment Training***

Deployment training would principally involve moving troops and equipment from SBMR to the other training areas in Hawai'i or to the continental US. As with current force training, transportation would use a combination of vehicles, high-speed vessels, and C-17 and C-130 aircraft, depending on the type and location of training. Deployment training would be similar to the current training, except SBCT units would be deployed at least twice a year to PTA from HAFB or WAAF using one to two C-17 or C-130 aircraft. Equipment would be deployed to PTA by 6 more individual LSV roundtrips a year. There are no adequate facilities to support deployment activities from multiple airfields in Hawai'i. The proposed Multiple Deployment Facility would provide the facilities necessary for SBCT to prepare equipment and vehicles for deployment from either WAAF or HAFB. Stryker vehicles and trucks would also move Soldiers and equipment from SBMR to other training areas. Those that travel on public roads would follow the rules for convoys as spelled out in Section 2.2.3.

#### ***Aviation Training***

The number and types of aircraft used for aviation training are expected to be the same as under current force training, with the exception of UAVs. However, the SBCT will not rely on helicopters in the same way light infantry units do. SBCT aviation units will not be used to transport troops but will be used more for supply, convoy support, and close air support. There will not be as many air assault operations during SBCT training.

The aircraft that are used in support of current forces in Hawai'i are the armed reconnaissance OH58D Kiowa Warriors, utility lift UH60 Blackhawks, and the medium lift

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CH47 Chinook. The individual use and frequency of the UAVs has yet to be determined, as it would be dictated by each individual training scenario.

***Combined Live-Fire/Maneuver Training***

SBCT forces would conduct dismounted training to include company-level CALFEXs. The only increase in CALFEXs would be from the introduction of the RSTA Squadron, which could conduct up to three company CALFEXs per year. The SBCT dismounted CALFEXs would be similar to the CALFEXs conducted by the current force, using the same types of weapons and similar tactics. SBCT dismounted CALFEX training would occur at several ranges throughout Hawai'i including the SBMR BAX (company-level), PTA BAX (brigade-level), and possibly MMR (company-level).

MMR is important to military training in Hawai'i. Although SBCT training does not depend on it, SBCT forces would use MMR if the range were available after completion of the MMR FEIS and ROD. The MMR EIS will analyze the potential environmental impacts associated with dismounted CALFEXs for both current force and SBCT; therefore, this SBCT EIS does not analyze training impacts of SBCT at MMR.

***Force-on-Force Training***

There would be no change in force-on-force training under the Proposed Action, except for the nonlive-fire training at WPAA. However, there would be additional organizations, such as the RSTA Squadron and Anti-Armor Company, which would support the force-on-force units. Force-on-force training would still occur at SBMR, KTA, and existing PTA installations.

**2.3.5 Institutional Programs**

Total Army transformation also affects installation management. Installation management that directly affects the environment includes range management, environmental management, and real property management. The programs described below reflect ongoing programs and total Army transformation changes.

***Implement Sustainable Range Program***

The Army is undertaking a new approach to its range management. The Sustainable Range Program (SR Program) will improve the integration of all programs that affect or are affected by live training. The SR Program begins at Headquarters, Department of the Army, and will be integrated at the Major Army Command and installation level. Through the SR Program, the Army seeks to ensure that its ranges will be available indefinitely to support training readiness. Army ranges are considered to be a combination of live training infrastructure, installation facilities, and the environment. The SR Program integrates training, facility, and environmental management.

***Implement Ordnance Impact Area Management***

After each training event all range trash, including spent shell casings, outside the ordnance impact areas would be cleaned up. In addition all range trash would be cleaned up as feasible during range maintenance.



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***Implement an Environmental Management System***

An Environmental Management System (EMS) is a tool that could provide the Army with a means for the management of environmental activities and resources. The EMS would require the Army to define its environmental goals and to document the processes it uses to achieve those goals. By imposing this discipline, the Army would be able to improve compliance with environmental laws and to reduce environmental impacts. USARHAW already has mature environmental programs with many elements of an EMS.

Executive Order 13148, Greening the Government Through Leadership in Environmental Management, requires implementing an EMS at all appropriate federal facilities by December 31, 2005. The policy calls for systematic integration of environmental management into all missions, activities, and functions. The policy requires current processes to be continually reviewed to identify better ways to reconcile national defense and environmental stewardship missions.

EMS is not a new requirement but a change in management practices. It requires the Army to adapt existing management processes to identify and reduce the environmental risks inherent in mission activities. This approach is intended to make complying with environmental laws simpler, less costly, and a routine part of mission planning and execution.

***Continue Cultural Resources Management Planning***

The Army will continue with cultural resources management as it currently exists.

***Continue Environmental Management Programs***

As discussed previously, the current Army environmental strategy consists of four major areas of activity: pollution prevention, compliance, restoration, and conservation. Projects under each major activity area are implemented and managed at USARHAW. Activities currently conducted under these programs would continue under the Proposed Action and would ultimately be integrated into the EMS.

***Continue Ongoing Management Programs to Manage Training and Protect the Environment, as Detailed under the No Action Alternative and Fully Implement Existing Management Plans***

Several plans and programs are in place or would be developed to mitigate potential impacts of the Proposed Action, as well as to protect and manage the biological, physical, and socioeconomic environment at USARHAW during transformation. The following programs are in place and operating at USARHAW and would be fully implemented under the Proposed Action:

- Integrated training area management;
- Integrated natural resources management plan;
- Integrated cultural resources management plan;
- Range development plan; and

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- Real property master plan.

**2.4 REDUCED LAND ACQUISITION ALTERNATIVE**

This alternative would involve downsizing the proposed SRAA by approximately 93 percent, from approximately 1,402 acres (567 hectares) to approximately 100 acres (40.5 hectares). The 100 acres (40.5 hectares) of land would be necessary within the SRAA for constructing the proposed SBCT motor pool because the motor pool must be located close to SBMR where the Soldiers are based and no space is available for building this facility at SBMR or WAAF. This alternative is identical to the Proposed Action, with two exceptions: moving QTR2 to PTA and reducing the land acquired at SRAA. This would require that an expanded version of QTR2 be constructed at PTA rather than at the home station, SBMR. This is contrary to current training of the 25<sup>th</sup> Infantry Division, which is based on troops completing qualification training at SBMR prior to deploying to PTA. The larger exercises conducted at PTA are more effective if each Soldier is fully qualified at SBMR before deploying to PTA. However, the length of deployment at PTA could be extended to allow training at QTR2 before other training is conducted at PTA. Soldiers not able to qualify during deployment would have to return to PTA to complete their qualifications. The best available site for the proposed QTR2 at PTA is on the site of the current Range 8. A controlled firing area over the QTR2 at PTA would not be necessary since the range would be overlain by the existing R-3103 restricted area. This location falls within the overall boundaries of the anti-armor and live-fire tracking range (AALFTR) also proposed for this site, meaning that both ranges could not be used for live-fire at the same time. An expanded version of QTR2, to include sniper and machine gun training, as well as pistol and M16, would be constructed at PTA, overlaying the proposed AALFTR, so no new area would need to be used or ordnance impact area created. Although the purpose and need for transforming the 2<sup>nd</sup> Brigade, 25<sup>th</sup> ID(L) would still be fulfilled, it would not be as efficient, and in some circumstances not every Soldier would become qualified, requiring additional training.

**2.5 NO ACTION ALTERNATIVE**

CEQ regulations state that an EIS must evaluate a No Action Alternative, to serve as a benchmark against which the potential effects of actions can be evaluated. The No Action Alternative represents what would occur if the Army were not to carry out the Proposed Action.

Under the No Action Alternative, the Army would not undertake the proposed conversion of the 2<sup>nd</sup> Brigade to an SBCT in Hawai'i and therefore would not meet the purpose and need for transforming the USARHAW 2<sup>nd</sup> Brigade, 25<sup>th</sup> ID(L). The 2<sup>nd</sup> Brigade would continue to train and operate as a conventional light infantry force.

**2.5.1 Current Force Vehicle and Weapon Systems**

Vehicles and weapons used under the No Action Alternative would be similar to those that are used now.

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ability to provide specific training, such as virtual training with a fixed tactical internet (FTI) and antitank missile training. Furthermore shortcomings in capacity and capability of live-fire and simulation training facilities would make it impossible to train the Soldiers of the SBCT to the Army standard. Reduced training time would mean that fewer Soldiers were qualified on their individual weapons systems and that elements of the brigade would not be trained in their collective tasks. This alternative would not meet the purpose and need of transforming the USARHAW 2<sup>nd</sup> Brigade, 25<sup>th</sup> ID(L).

### 2.6.3 Transformation in Hawai'i with Maneuver Live-Fire and Nonlive-Fire Training on the Continental US Instead of on Hawai'i

Under this alternative, the Army would transform by conducting collective live-fire and maneuver training on a continental US installation. All proposed cantonment facilities required to support an SBCT would be built, but no new collective maneuver ranges (nonlive-fire and live-fire) would be constructed. The Army would not acquire the 23,000-acre (9,308 hectare) WPAA adjacent to PTA. In addition the following projects would not be built in Hawai'i under this alternative because they are tied to the relocated maneuver training:

- The battle area complexes at SBMR and PTA;
- The Combined Arms Collective Training Facility (CACTF) with SRTA live-fire training at KTA;
- The Urban Assault Course (UACTF) at SBMR; and
- The Anti-Armor Live-Fire and Tracking Range at PTA.

QTR1 and QTR2 would still be constructed, and the SRAA would still be needed to provide space for QTR2 and the SBCT motor pool. Both QTRs would be needed to provide day-to-day training of Soldiers on their individual weapons. The Virtual Flight Training Facility (VFTF) to be built at SBMR is a key element of the training requirements for an SBCT because their suite of simulators and specialized training equipment are an integral part of the transformation process.

The Army considered ranges west of the Mississippi River to minimize travel time. Based on these criteria, continental US Army installations considered as potential sites for 2<sup>nd</sup> Brigade live-fire and maneuver training include Fort Richardson and Fort Wainwright and the Donnelly Training Area in Alaska (considered as one installation for this analysis and collectively called US Army, Alaska (USARAK), Fort Lewis and Yakima Training Center in Washington State (considered a single installation and referred to as Fort Lewis), the National Training Center at Fort Irwin in California, Fort Carson and Piñon Canyon Training Area in Colorado (considered as one installation and referred to as Fort Carson), Fort Hood in Texas, Fort Riley in Kansas, and Fort Polk in Louisiana. These are the major Army installations in the western US devoted to training US Army forces command units. Table 2-11 provides an overview of the installations.

In Table 2-11, "total area" is the land area in acres occupied by each military reservation. Ranges, environmental constraints, cantonment areas, and other factors, such as regulatory



## 2. Description of the Proposed Action and Alternatives

requirements and access, reduce actual lands available for training at each installation. "Current mission" describes the major functions of each installation. As indicated in the last column of the table, USARAK, Fort Lewis, and Fort Polk are undergoing transformation to receive SBCTs; one will be stationed in USARAK, two at Fort Lewis, and one at Fort Polk. The specialized ranges, as well as the MSTF/ISE, VFTF, FTI, and Installation Information Infrastructure Architecture (I3A) projects required for SBCT training are already programmed to be built at these installations. The other installations may eventually receive similar facilities as transformation to the future force occurs over the next 30 years, but at present Fotts Irwin, Riley, Hood, and Carson are not capable of providing the specialized training an SBCT requires, and there are no current plans to construct the required facilities at those installations.

Table 2-11 shows that, of the six installations considered, only USARAK, Fort Lewis, and Fort Polk will have the facilities required to train a Stryker brigade; therefore, the others are excluded from further consideration.

If the 2<sup>nd</sup> Brigade is to train at either of these installations, all the people, equipment, and vehicles associated with each element of the brigade would have to be transported to Alaska or Washington. This would be required to ensure that the Soldiers could train with their own equipment in accordance with Army doctrine. In addition equipment belonging to the Stryker brigades in Alaska and Washington cannot be assumed to be available for use by Hawai'i personnel. While it is possible to move equipment by barge from O'ahu to the island of Hawai'i, Alaska and Washington are too far away for this type of transport to be practical, and the equipment and personnel would need to be airlifted. Military Traffic Management Command's Traffic Engineering Agency estimated in December 2000 at least 79 C-5 aircraft and 110 C-17 aircraft would be required to move one Stryker brigade (USARHAW 2001a), effectively removing over 80 percent of the Air Force's transport capabilities during training of one SBCT. The Air Force will receive the last of its 120 C-17 aircraft in November 2004 (FAS 2002a) and has 109 C-5 aircraft, with no more in the pipeline (FAS 2002b). Only six C-17s are proposed to be stationed in Hawai'i and will replace four C-130s currently stationed there.

Even though the entire brigade may not need to be transported at one time, moving even one rifle battalion would tie up a substantial portion of the Air Force's airlift capability for an extended period of time. Air Force airlift support would be unavailable for other uses, including actual wartime deployments of the force. Aside from the substantial costs of such operations, it is impractical to expect the Air Force to commit so large a percentage of its resources to support a training exercise.

USARHAW staff estimates that preparation prior to and after each deployment would take five days total. Flight times are estimated at six hours each way. Assuming that maneuver training is to be conducted four times per year, approximately 40 training days of the available 270 would be lost during deployments to Alaska or Washington.

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**Table 2-11**  
**Continental US Army Installations Considered**

<b>Installation, State</b>	<b>Total Area (acres)</b>	<b>Current Mission</b>	<b>SBCT Required Facilities?</b>
Fort Richardson	71,441 (28, 923 hectares)	Home to 172 <sup>nd</sup> Infantry	Will be constructed. <sup>1</sup>
Fort Wainwright	656,241 (265.684 hectares)	Brigade; programmed for	
Donnelly Training Area, Alaska	640,488 (259,290 hectares)	one SBCT.	
Fort Lewis	86,174 (34,888 hectares)	Home to I Corps, 1st	Will be constructed. <sup>1</sup>
Yakima Training Center, Washington	316,786 (128,253 hectares)	Brigade of the 25 <sup>th</sup> ID(L), and the 3rd Brigade of the 2nd Infantry Division. Programmed for two SBCTs.	
National Training Center at Fort Irwin, California	636,251 (257,591 hectares)	National Training Center—desert training of heavy Army forces.	No
Fort Carson	137,404 (55,629 hectares)	Home to 7th Infantry	No
Piñon Canyon Maneuver Site, Colorado	235,896 (95,504 hectares)	Division (mechanized).	
Fort Hood, Texas	214,352 (86,782 hectares)	Home to III Corps, 1st Cavalry Division, 4th Infantry Division (mechanized).	No
Fort Riley, Kansas	100,656 (40,751 hectares)	Home to the 24th Infantry Division (mechanized).	No
Fort Polk, Louisiana	198,143 (80,220 hectares)	Home of the Joint Readiness Training Center and 2 <sup>nd</sup> Armored Cavalry Regiment.	Will be constructed. <sup>1</sup>

<sup>1</sup>Facilities of the type used to train an SBCT will ultimately be built at all major Army training installations as part of Transformation to the future force, except the AALFTR, which is specifically designated for Hawai'i, but not in time for the 2<sup>nd</sup> Brigade to meet its 2007 IOC target date.

Source: Acreage from Table C-8, US Army 2002c

An analysis of USARAK and Fort Lewis training facilities and capacity was conducted as an appendix to the USARHAW RD Plan (Nakata Planning Group LLC. 2002a). It showed that Fort Lewis and USARAK would lack adequate collective live-fire training facilities to support an additional SBCT. Neither USARAK nor Fort Lewis is proposing to build an anti-armor live-fire and tracking range to provide the capacity for training that has been programmed for Hawai'i. The Army proposes to conduct anti-armor live-fire training at these facilities on ranges constructed for other uses. This requires careful scheduling to avoid conflicts, and adding an additional SBCT would reduce the throughput capacity to unacceptable levels. Because Fort Polk will already be training an SBCT unit, as well as

- Have an adverse effect on a wetland or riparian habitat regulated by the local, state, or federal government or on another sensitive habitat (such as designated critical habitat) identified in local or regional plans, policies, or regulations or by the USFWS or NOAA;
- Interfere with the movement of any native resident or migratory wildlife species (including aquatic species) or with established native resident or migratory wildlife corridors;
- Alter or destroy high to moderate habitat that would prevent biological communities in the area prior to the project from reestablishing;
- Conflict with Hawai'i Coastal Zone Management Program policies;
- Introduce or increase the prevalence of undesirable nonnative species; or
- Cause long-term loss or impairment of a substantial portion of local habitat (species-dependent).

In addition to these factors, public concerns expressed during the scoping process were also considered in the impact analysis. These concerns included impacts on native species, particularly federally listed ones, and the loss or disturbance of natural habitat. Marine mammals and the Humpback Whale Sanctuary were also mentioned as specific issues of concern.

#### 4.10.3 Summary of Impacts

In response to the agency and public comments received during the Draft EIS comment period we reevaluated our analysis of the biological resources. As a result of considering these comments and a reanalysis of the available information, we recognize that the impacts to biological resources from fire could not be mitigated to the less than significant level. However, these impacts will be substantially reduced as a result of mitigation.

Table 4-10 lists the types of biological impacts associated with the evaluated alternatives at the relevant installations. General descriptions of the impacts are also provided.

##### ***Proposed Action (Preferred Alternative)***

The Proposed Action would affect biological resources identified within the SBCT ROI. These resources include general plants, animals, and vegetation communities, as well as sensitive species and habitats. Sensitive habitats refer to BSAs, as identified in the O'ahu and PTA INRMPs (USARHAW and 25th ID[L] 2001a, 2001b), wetlands, and federally designated critical habitat. Impacts to these resources are summarized below and are discussed in detail for SBMR, DMR, KTA, and PTA in the appropriate chapters.

##### ***Significant Impacts***

Impact 1: Impact from fire on sensitive species and sensitive habitats. Fire would have a significant impact on SBMR, KTA, and PTA. At DMR and KLOA impacts would be significant but mitigable to less than significant. Impacts are not mitigable to the less than significant level when considered project-wide. The proposed live-fire training would increase the probability



**Table 4-10**  
**Summary of Potential Biological Resources Impacts**

Impact Issues	SBMR			DMR			KTA/KLOA			PTA			Project-wide Impacts		
	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA
Impacts from fire on sensitive species and sensitive habitat.	⊗	⊗	⊗	⊗	⊗	⊗	⊗/⊗	⊗/⊗	⊗/⊗	⊗	⊗	⊗	⊗	⊗	⊗
Impacts from construction and training activities on sensitive species and sensitive habitat.	⊗	⊗	⊗	⊗	⊗	⊗	⊗/⊗	⊗/⊗	⊗/⊗	⊗	⊗	⊗	⊗	⊗	⊗
Impacts from the spread of nonnative species on sensitive species and sensitive habitat.	⊗	⊗	⊗	⊗	⊗	⊗	⊗/⊗	⊗/⊗	⊗/⊗	⊗	⊗	⊗	⊗	⊗	⊗
Impacts from construction and training activities on general habitat and wildlife.	⊙	⊙	⊙	⊙	⊙	⊙	⊙/⊙	⊙/⊙	⊙/⊙	⊙	⊙	⊙	⊙	⊙	⊙
Threat to migratory birds.	⊙	⊙	⊙	⊙	⊙	⊙	⊙/⊙	⊙/⊙	⊙/⊙	⊙	⊙	⊙	⊙	⊙	⊙
Noise and visual impacts.	⊙	⊙	⊙	⊙	⊙	⊙	⊙/⊙	⊙/⊙	⊙/⊙	⊙	⊙	⊙	⊙	⊙	⊙
Vessel impacts on marine wildlife and habitat.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	⊙	⊙	⊙	⊙	⊙	⊙
Runoff impacts on marine wildlife and coral ecosystems.	N/A	N/A	N/A	⊙	⊙	⊙	⊙/N/A	⊙/N/A	N/A	⊙	⊙	⊙	⊙	⊙	⊙

This table summarizes project-wide impacts. For installation-specific impacts see Chapters 5 – 8.

In cases when there would be both beneficial and adverse impacts, both are shown on this table. Mitigation measures would only apply to adverse impacts.

**LEGEND:**

⊗ = Significant

⊙ = Significant but mitigable to less than significant

⊙ = Less than significant

○ = No impact

+ = Beneficial impact

N/A = Not applicable

PA = Proposed Action

RLA = Reduced Land Acquisition

NA = No Action

that there would be a wildland fire in the project ROI (Section 4.12.3, Impact 7). Full implementation of the terms and conditions of the Biological Opinions for SBCT and current force activities on the islands of O'ahu and Hawai'i (dated October 2003 and December 2003, respectively) and full implementation of the Wildland Fire Management Plan (dated October 2003) will substantially reduce the impacts, but not to the less than significant level. The Army has three years to develop and execute the O'ahu Implementation Plan as directed by USFWS in the Biological Opinion. The Army has two years to execute the terms and conditions defined in the Biological Opinion for the Pohakuloa Training Area. Since there is a risk that a wildfire could result in an irretrievable loss of individuals of sensitive species, the Army has made a conservative determination that although the mitigation will considerably reduce the impacts to biological resources, the impacts may not be reduced to a less than significant level. The mitigation measures below will substantially reduce the impact but not to less than significant.

Regulatory and Administrative Mitigation 1. The effects of the proposed action on listed species in the ROI have been evaluated in the ESA Section 7 Consultation with USFWS. The Army will implement all the terms and conditions defined in the Biological Opinions issued by USFWS for current force and SBCT proposed actions on the islands of O'ahu and Hawai'i. The terms and conditions that implement the reasonable and prudent measures determined during this consultation will be incorporated into the Proposed Action. These measures will help avoid effects and compensate for impacts on listed species that would result directly and indirectly from implementation of the Proposed Action. The Biological Opinions are available upon request.

The IWEMP for Pōhakuloa and O'ahu Training Areas was updated in October 2003. The Army will fully implement this plan for all existing and new training areas to reduce the impacts associated with wildland fires. The plan is available upon request.

Additional Mitigation 1. No additional mitigation measures were identified for this impact.

Impact 2: Impacts from construction and training activities on sensitive species and sensitive habitat. The construction and training impacts on sensitive biological resources associated with the Proposed Action at PTA are significant and not mitigable to the less than significant level. These activities may have a significant and mitigable impact on sensitive species and habitat (including critical habitat) on SBMR, DMR, and KTA/KLOA. Federally listed species and critical habitat, observed in or with the potential to occur within the SBMR, DMR, KTA/KLOA and PTA ROI are listed in Appendix I-3. SBCT activities in this ROI include the use of tactical vehicles for off-road maneuvers, increased dismounted maneuvers, and increased amount of ammunition used (including live fire at SBMR, KTA [SRTA only] and PTA). The direct and indirect effects would be habitat disturbance, deterrence of wildlife use, spread of nonnative species, increase in the probability of fire and direct take of listed wildlife, and destruction of listed plants. At PTA, individuals of sensitive plant species would be eliminated by tactical vehicle maneuvers, construction, and dismounted training and there is the potential for currently unsurveyed lava tubes with sensitive arthropod species to be crushed during training maneuvers. These installation-specific impacts would be mitigated to the less than significant level by the regulatory and administrative measures described below.

The project-wide impact from construction and training on sensitive species and sensitive habitat, including their federally designated critical habitat, would be significant but not mitigable to the less than significant level. The combined impacts of fire at PTA, SBMR, KTA, and DMR and mounted maneuver at PTA could cause long-term loss or impairment of a substantial portion of natural habitat and the loss of individuals. Though the following mitigation measures would decrease the likelihood of this happening, there is a risk that a wildfire could result in an irretrievable loss of individuals of sensitive species. The overall impact of project actions on sensitive (listed) species and their sensitive habitat (including federally designated critical habitat) is still considered significant, according to factors detailed in Section 4.10.2., but not mitigable to less than significant. The mitigation measures below will substantially reduce the impact, but not to less than significant.

Regulatory and Administrative Mitigation 2. The Army will implement all the terms and conditions defined in the Biological Opinions issued by USFWS for current force and SBCT proposed actions on O'ahu and the island of Hawai'i. The terms and conditions that implement the reasonable and prudent measures determined during this consultation will be incorporated into the Proposed Action. These measures will help avoid effects and compensate for impacts on listed species that would result directly and indirectly from implementing the Proposed Action. The Biological Opinions are available upon request. The Army will implement land management practices and procedures described in the ITAM annual work plan to reduce erosion impacts (US Army Hawai'i 2001a). Currently these measures include implementing a training requirement integration (TRI) program; implementing an Integrated Training Area Management (ITAM) program; a Sustainable Range Awareness (SRA) program; developing and enforcing range regulations; implementing an Erosion and Sediment Control Management Plan; coordinating with other participants in the Ko'olau Mountains Watershed Partnership (KMWP); and continuing to implement land rehabilitation projects, as needed, within the Land Rehabilitation and Maintenance (LRAM) program. Examples of current LRAM activities at KTA include revegetation projects involving site preparation, liming, fertilization, seeding or hydroseeding, tree planting, irrigation, and mulching; a combat trail maintenance program (CTP); coordination through the Troop Construction Coordination Committee (TCCC) on road maintenance projects; and development of mapping and GIS tools for identifying and tracking progress of mitigation measures.

Additional Mitigation 2: The Army proposes to fence or flag where practicable any sensitive plant communities from activities that may take place in the ROI. The Biological Opinions outline fencing for the majority of the sensitive species. USARHAW will evaluate if additional fencing may be necessary.

#### Significant Impacts Mitigable to Less Than Significant

Impact 3: Impact from the spread of nonnative species on sensitive species and sensitive habitat. In general, nonnative plant and animal species pose a threat to Hawaiian native ecosystems (Atlas 1998). The Proposed Action in the SBMR, DMR, KTA/KLOA, and PTA ROIs would increase the potential for the introduction and spread of alien species through troops and equipment movement, construction, and fires. Nonnative species alter habitat, prey on native species, compete for resources, and carry diseases, all of which decrease the success of native species.

Regulatory and Administrative Mitigation 3. As required in the terms and conditions of the Biological Opinions, the Army will implement the following:

- Educate soldiers and others potentially using the facilities and roads in the importance of cleaning vehicles, equipment, and field gear;
- Educate contractors and their employees about the need to wear weed-free clothes and to maintain weed-free vehicles when coming onto the construction site and to avoid introducing nonnative species to the project site;
- Prepare a one-page insert to construction contract bids informing potential bidders of the requirement; and



- An adverse effect on a historic property or TCP as defined under Section 106 of the NHPA; or
- A violation of the provisions of AIRFA, ARPA or NAGPRA.

It should be noted that an adverse effect on an historic property as defined by NHPA is not necessarily a significant impact under NEPA. While mitigation under NHPA does not necessarily negate the adverse nature of an effect, mitigation under NEPA can reduce the significance of an impact. NHPA and NEPA compliance are separate and parallel processes, and the standards and thresholds of the two acts are not precisely the same.

It should also be noted that some mitigation measures for other resource areas, such as cultivating land to revegetate a plant species, might involve actions that could create adverse effects on cultural resources. Prior to implementation, these actions would also undergo Section 106 review following federal guidelines.

In addition to these factors, public concerns expressed during the scoping process were also considered in the impact analysis. These concerns included access to traditional and religious sites for ceremonial purposes, access for hunting and gathering, protection and preservation of archaeological and traditional sites, interpretation of significance based on Native Hawaiian tradition and the knowledge of elders of the community, community involvement in managing cultural resources on Army land, and compliance with federal and state laws and regulations concerning cultural resources protection.

#### 4.11.3 Summary of Impacts

Table 4-11 lists potential cultural resource impacts associated with the Proposed Action, Reduced Land Acquisition, and No Action at the relevant installations, based on identified cultural resources. General descriptions of identified impacts are provided.

Specifically for SBCT, the Army has complied with its responsibilities under the NHPA by executing a PA with the SHPO and the ACHP and through consultation with the OHA, the NPS, the ROOK, the OCHCC, Hui Malama I Na Kupuna 'O Hawai'i Nei, the OIBC, the HIBC, the HHE, and Native Hawaiian organizations, families, and individuals that attach traditional religious and cultural importance to cultural sites within the various project areas. The January 2004 PA for the SBCT project does not override any rights Native Hawaiians and Native Hawaiian organizations have under federal law, as described in 36 CFR 800.2(c)(ii)(B). Appendix J contains a copy of the PA.

#### *Proposed Action (Preferred Alternative)*

##### Significant Impacts

There would significant impacts on cultural resources and ATIs under the Proposed Action. Mitigation measures have been developed to lessen impacts to these resources.

Table 4-11  
Summary of Potential Cultural Resource Impacts

Impact Issues	SBMR			DMR			KTA/KLOA			PTA			Project-wide Impacts		
	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA	PA	RLA	NA
Impacts on historic buildings	⊙	⊙	○	○	○	○	⊗/○	⊗/○	○/○	⊗	⊗	○	⊗	⊗	○
Impacts on archaeological resources from range and facility construction	⊗	⊗	○	○	○	○	⊗/○	⊗/○	○/○	⊗	⊗	○	⊗	⊗	○
Impacts on archaeological resources from training activities	⊗	⊗	○	⊗	⊗	○	○/○	○/○	○/○	⊗	⊗	○	⊗	⊗	○
Impacts on archaeological sites from construction of FTI	○	○	○	○	○	○	○/○	○/○	○/○	○	○	○	○	○	○
Impacts on ATIs	⊗	⊗	○	⊗	⊗	○	○/○	○/○	○/○	⊗	⊗	○	⊗	⊗	○
Impacts from installation information infrastructure architecture construction	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	○	○	○	○	○	○
Impacts on archaeological sites from road or trail construction	○	○	○	⊗	⊗	○	N/A	N/A	N/A	⊗	⊗	○	⊗	⊗	○
Impacts on archaeological sites from road use	○	○	N/A	○	○	○	○/○	○/○	○/○	⊗	⊗	○	⊗	⊗	○

This table summarizes project-wide impacts. For installation-specific impacts see Chapters 5 – 8.

In cases when there would be both beneficial and adverse impacts, both are shown on this table. Mitigation measures would only apply to adverse impacts.

#### LEGEND:

- ⊗ = Significant
- ⊙ = Significant but mitigable to less than significant
- ⊕ = Less than significant
- = No impact
- + = Beneficial impact

- N/A = Not applicable
- PA = Proposed Action
- RLA = Reduced Land Acquisition
- NA = No Action

#### Significant Impacts

Impact 1: Impacts on historic buildings. Potential significant impacts on historic buildings would occur at KTA and PTA. Constructing the CACTF could have significant impacts on historic buildings at KTA. Among the properties to that may be adversely affected by the Proposed Action are the Nike Missile Site and other buildings that may be eligible for listing on the NRHP as Cold War-era properties. Construction of the Range Maintenance Facility at PTA would require demolishing Cold War-era buildings; the BAAF runway scheduled for upgrade may be a Cold War-era historic property as well. The Ke'amuku Village Complex within the WPAA may be eligible for listing on the NRHP. The construction of the Range Control Facility at SBMR would require demolishing buildings that are or will soon be 50 years of age and therefore may be eligible for the NRHP. The mitigation measures given below will mitigate the severity of the demolition of historic buildings at PTA but not to less than significant levels.

Regulatory and Administrative Mitigation 1. The Army will consult with the SHPO, ACHP, and interested parties, in accordance with Section 106 of the NHPA, on the Nike Missile Site

complex. The Army will manage and will renovate this complex in compliance with the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

The Army will require WPAA buildings to be avoided by using range management protocols, which will require the area around the buildings to be off-limits to military training activities. Ke'amuku Village will be marked as off-limits for training to protect it from damage.

Impact 2: Impacts on archaeological resources from range and facility construction. The greatest number and intensity of impacts from the Proposed Action would occur at SBMR and PTA. These two areas have the most proposed transformation related ground-disturbing activities and may have the most impacts on archaeological resources.

Facility construction involves ground softening at the PTA BAX, and grubbing vegetation, grading site surfaces, excavating the subsurface, and moving heavy construction equipment at all construction sites. All of these activities may result in direct destruction of or damage to archaeological resources. The mitigation measures given below would mitigate the severity of the impacts but not to less than significant levels.

Regulatory and Administrative Mitigation 2. Before construction, the Army will complete the evaluation of any archaeological sites within areas subject to range and facility construction. Sites determined to be eligible for the NRHP will be flagged for avoidance. The projects will be designed to avoid all eligible and unevaluated archaeological sites, to the full extent practicable. Geographical information system (GIS) and global positioning system (GPS) information will be given to project designers and range control to ensure that any sites are considered in project design. If it is not possible to avoid archaeological sites, the Army will consult in accordance with the PA to determine the appropriate mitigation for the damage to the sites, such as data recovery or other mitigation measures. To address the accidental discovery of archaeological sites, human remains, or cultural items, the Army has developed an inadvertent discovery plan (IDP) as part of the PA.

Impact 3: Impacts on archaeological resources from training activities. Significant impacts on archaeological sites would occur on DMR and PTA. Significant but mitigable to less than significant impacts would occur on SBMR and KTA. Potential impacts from the proposed training activities include damage to sites from subsurface excavations related to troop training (e.g., field fortifications, emplacement of obstacles), increased access by ground troops into the ranges, off-road vehicular movement, possible damage from live fire where resources are in the line of fire, and cleanup of unexploded ordnance within or adjacent to historic properties. Off-road mounted maneuvers with tactical vehicles could result in greater impacts on archaeological sites in all of the training areas. Activities such as revegetation could also cause impacts through ground disturbance. The presence of large numbers of personnel could affect resources through vandalism or accidental damage. Mitigation measures described below will reduce the severity of the impacts on these resources but not to less than significant levels.



Regulatory and Administrative Mitigation 3. The Army will evaluate archaeological sites within training areas related to SBCT. Sites determined to be eligible for the NRHP and sites pending evaluation will be identified and avoided through protective measures, to the full extent practicable. If it is not feasible to avoid identified archaeological sites or newly discovered sites, the Army will consult in accordance with the PA to determine the appropriate mitigation for the damage to the sites, such as data recovery or other mitigation measures. To address the accidental discovery of archaeological sites, human remains, or cultural items, the Army has developed an IDP as part of the PA.

Impact 4: Impacts on Areas of Traditional Importance. Potentially significant impacts on ATIs may occur at SBMR, DMR, and PTA.

Potential impacts related to construction of training facilities could include destroying or damaging ATIs, including shrines, archaeological sites, burials, or elements of Native Hawaiian cultural landscapes. Purchasing the SRAA at SBMR and the WPAA at PTA, and then using them for military training, could limit Native Hawaiian access to and use of sites on these parcels for traditional or religious purposes. Native Hawaiians consider range and training activities inappropriate and disrespectful uses of the land that disturb and change the character and feeling of spiritual places.

Construction of FTL antennas at SBMR, including on Mount Ka'ala, and at PTA may result in visual intrusion on cultural landscapes. Because some sites would require construction, they could have an adverse effect on the nature of the cultural landscape.

Activities relating to the construction of Dillingham Trail from DMR to SBMR could also result in significant impacts on such cultural properties; however, identified mitigations, including identification and avoidance, may reduce the severity of the impacts, but not to less than significant levels.

Regulatory and Administrative Mitigation 4. Facility construction or training area uses will be designed to avoid identified traditional places and limit visual impacts on TCPs by site location, design, and orientation, where feasible.

If avoiding identified TCPs or ATIs is not feasible because of interference with the military mission or risk to public safety, the Army will consult with the SHPO and Native Hawaiians, in accordance with the PA, to identify impacts and develop appropriate mitigation measures. Mitigation for impacts on the cultural landscape could include consulting with Native Hawaiians and using a cultural monitor during construction.

The Army will continue to provide Native Hawaiians with access to traditional religious and cultural properties, in accordance with AIRFA and Executive Order 13007, on a case-by-case basis. This access program will be expanded to include new land acquisitions.

The Army previously identified Native Hawaiian burial sites in the SBCT ROI. The Army completed notification and consultation procedures for these burial sites, in accordance with NAGPRA, and left these human remains in place. To address any impacts on any burial sites

or an inadvertent discovery of Native Hawaiian human remains or funerary objects, the Army will abide by all notification and consultation requirements outlined in Section 3 of NAGPRA.

Impact 5: Impacts on archaeological sites from road or trail construction. Construction of PTA Trail and the proposed trails through WPAA would result in a potentially significant impact on archaeological resources. Trail construction would involve vegetation removal and grading soil, as well as the regular use of heavy equipment. Some trail or road construction at WPAA is projected to go through areas with a high potential for archaeological resources. Cultural resources in the trail corridor and in construction staging areas may be adversely affected during construction of the trail. The PTA Trail route, as established, avoids all archaeological and historic sites in the Kawaihae area, but any alteration in the alignment could result in impacts on historic properties. Activities at WPAA could result in direct destruction or direct or indirect damage to archaeological resources by contributing to soil erosion. Additionally, construction activities could expose or disturb previously undiscovered cultural resources.

Construction of Dillingham Trail would involve vegetation removal and soil grading, as well as the regular use of heavy equipment. Cultural resources in the trail corridor and in construction staging areas could be adversely affected during construction. GIS and GPS information is available for all sites in the Dillingham Trail construction corridor. The project designers will use this information to avoid these sites and thereby mitigate impacts to less than significant levels.

Regulatory and Administrative Mitigation 5. In accordance with the PA, the Army will identify cultural properties, evaluate cultural properties for NRHP eligibility, and implement avoidance strategies to the full extent practicable. GIS and GPS information will be provided to project designers to ensure that sites are considered in the design and construction of all the proposed military vehicle trails and training roads on WPAA. If it is not possible to avoid archaeological sites, the Army will consult, in accordance with the PA, to determine the appropriate mitigation for the damage to the sites, such as data recovery or other mitigation measures. To address the accidental discovery of archaeological sites, human remains, or cultural items, the Army has developed an IDP as part of the PA.

#### Significant Impacts Mitigable to Less than Significant

Impact 6: Impacts on archaeological resources from road use. Impacts on sites along PTA Trail from military use of the trail could include erosion and possible vandalism or human access. These impacts are likely to be less than significant and will be mitigated by installation cultural resources personnel regularly monitoring them. Road use within WPAA poses a greater risk to resources recorded within the proposed new training area. The large number of gravel roads proposed would create additional impacts on sites within the WPAA, including erosion and possible vandalism or human access. The mitigation measures given below will mitigate the severity of the impacts to less than significant levels.

Regulatory and Administrative Mitigation 6. Eligible and unevaluated sites will be flagged and mapped on a range control GPS map. Installation cultural resources staff will monitor the sites regularly. Participants in training activities on the ranges will be ordered to avoid

signals. Of the 14 locations evaluated for construction of the Fixed Tactical Internet antennas on O'ahu, a maximum of eight will be selected from the locations represented in the EIS. Locations will be chosen based on the most suitable locations for communication logistics and avoidance of environmental concerns, such as cultural and biological resources. Four antennas would be installed at each proposed site on O'ahu, using existing tower sites when possible. Two of the antennas would be approximately four feet (1 meter) long and two inches (0.05 meter) in diameter, and the other two antennas would be approximately 10 feet (2.5 meters) long and two inches (0.05 meter) in diameter. All the antennas would be mounted on masts or existing utility poles, towers, or buildings, which would make each of the two SBER antennas a total of 102 feet tall; the total height of the SBMR antennas would range from 25 feet to 102 feet. Each site would have an area of 20 feet (6 meters) by 25 feet (7.6 meters), including a 15-foot (4.6-meter) by 20-foot (6-meter) concrete pad for the support structure and shed. Sites would be accessed via existing roads in all cases. No security lighting would be installed at the sites. Equipment sheds would house four radios and four batteries.

### ***Land Transactions***

#### ***South Range Land Acquisition***

The SRAA is south of SBMR, west of WAAF, and north of the Del Monte pineapple fields and the Honouliuli Preserve, which is a forested area managed by The Nature Conservancy. The SRAA is to the east of the Wai'anae Mountains. The proposed parcel acquisition would cover approximately 1,402 acres (567 hectares). The area would be used for mounted and dismounted maneuver training, and QTR2 and the motor pool would be constructed within this area.

#### ***Land Easement for Construction of Helemanō Trail***

Approximately 13 acres (5.3 hectares) of land would be acquired in a perpetual easement for constructing Helemanō Trail. If the proposed trail alignment changes, the Army will negotiate with the property owners on a new alignment and will conduct appropriate analysis and documentation, in accordance with NEPA, ESA, and NHPA.

### ***Training***

#### ***Operation of Qualification Training Range 1***

In general, QTR1 provide improved, consolidated facilities to more efficiently and cost-effectively conduct live-fire range qualification training, as well as training necessary to detect, identify, engage, and defeat dismounted and mounted enemy forces. Range training would include familiarizing troops with and qualifying them for using individual and crew-served weapons, including combat pistols/MP firearms (M9, .38 caliber [cal.], and .45 cal.), shotguns and rifles (M16, M4, M14, M21, and M24), and machine guns (M60, M249, M240B, and M2). The proposed facilities would also provide a location for maneuver training required by proposed units. Additional details regarding training at the QTR1 are included in Chapter 2.



The training at QTR1 will take place on approximately 120 acres (48.6 hectares) of disturbed land and would be used between 180 and 242 days per year. No combat vehicles would be in service at the site, but between 5 and 10 support vehicles would be used per training episode.

#### Operation of Qualification Training Range 2

The training at the QTR2 is anticipated to take place on approximately 120 acres (48.6 hectares) of agricultural land. The proposed range would be used between 180 and 240 days per year. No combat vehicles would be used, but between 5 and 10 support vehicles would be used.

#### Operation of Battle Area Complex

The proposal is to construct a BAX at SBMR, designed for company gunnery training and qualification requirements of the weapons systems associated with the proposed SBCT. The complex would support qualification for graduated live-fire training from squad to company level and some battalion exercises. The complex would incorporate all weapons intrinsic to the SBCT Infantry Company (except the Javelin) and would allow a variety of live-fire exercise scenarios. The range would also support dismounted infantry platoon tactical live fire operations, either independently of or simultaneously with supporting vehicles. The range would include the following training objective features: 4 course roads with crossover capability, 30 stationary armor targets, 6 moving armor targets, 174 stationary infantry targets, 14 moving infantry targets, 17 machine gun/observation bunkers, 2 grenade/breaching obstacles, 3 helicopter landing zones, 13 mortar simulation devices, and 8 vehicle trenches and firing positions. Since the Draft EIS was written, the training objective features have been updated to include a change from the current inventory of twelve 105mm howitzers to eighteen 155mm howitzers. The Draft EIS included an analysis of twelve 155mm howitzers; the Army has updated the analysis in the Final EIS to address eighteen 155mm howitzers.

The training at the BAX is anticipated to affect 2,075 acres (840 hectares) of existing disturbed range lands. The BAX is anticipated to use combat vehicles for a maximum of 210 days a year and a minimum of 180 days a year and to support vehicles a maximum of 8 days a year and a minimum of 4 days a year. Combat vehicles consist of Stryker and HMMWV vehicles, while support vehicles consist of 2½-ton to 5-ton vehicles. The BAX is anticipated to use various types of ammunitions, mines, and pyrotechnics.

#### Operation of the Urban Assault Course Training Facility

The urban assault course training facility (UACTF) would include a breach facility, UACTF, and a live-fire shoothouse. The breach facility would be used to train Soldiers in the proper techniques to enter buildings through doors, windows, and walls. The UACTF would be used to train Soldiers in other techniques associated with urban combat, including underground training. The live-fire shoothouse would be used to train individuals, squads, and platoons on the proper techniques to enter and clear a building. This facility is required to support the combined arms urban operations training strategy for conducting full spectrum operations (offense, defense, stability and support). Since the Draft EIS was written, the training objective features have been updated to include a change from the current inventory of twelve 105mm howitzers to eighteen 155mm howitzers. The Draft EIS

included an analysis of twelve 155mm howitzers; the Army has updated the analysis in the Final EIS to address eighteen 155mm howitzers.

The training at the UACTF is anticipated to affect 14 acres (5.7 hectares) of previously disturbed range lands. The UACTF is anticipated to be used a maximum of 210 days and a minimum of 75 days per year. The UACTF is anticipated to use various types of ammunitions, mines, and pyrotechnics.

#### Use of Information Infrastructure Architecture

These facilities are being constructed to meet requirements of the current mission of the 2<sup>nd</sup> Brigade. The environmental effects of this proposed construction are addressed in a separate NEPA document. Only the use of this project by SBCT forces will be addressed in this SBCT EIS. The facilities would include fiber optics and copper cables running from the cantonment area to the ranges, the motor pool, and other facilities within the installation. These telecommunications facilities would furnish digital information necessary for interconnections among various ranges on SBMR, WAAF, HMR, KTA, and other locations on O'ahu. Also included would be underground and aboveground cable to upgrade the e-mail system, the asset visibility system, the automated personnel processing system, and video teleconferencing capability.

#### General SBCT Training

Transformation activities include military training on lands outside of developed areas, such as the cantonment area. Such training would include nonlive-fire, mounted maneuver training (using vehicles such as the Stryker and HMMWV on 1,235 acres [500 hectares]) and other nonlive-fire military training on foot. Most of the nonlive-fire training by SBCT forces would be similar to that being conducted by current force light infantry brigades.

As discussed in Chapter 2, training includes establishing and using tactical and logistical operations and administrative centers, as well as smaller more dispersed activities, such as bivouac. As with current training, exercises would continue to be at the squad through company level, with some opportunities for battalion and above training. General SBCT training would likely occur between 180 and 242 days per year.

Field activities, or training exercises, can involve a variety of activities, such as vehicle movement, maneuvers, and convoys, foot maneuvers, bivouacking, limited aviation training, and staff training exercises. Field exercises can generally take place in all training areas outside of the designated cantonment areas. Currently, trafficable areas available for maneuver training exercises are undefined but are assumed to include sizable portions of all USARHAW training installations.

#### ***Proposed Action Impacts***

Table 5-1 is a list of environmental impacts by specific SBCT project and resource category. This gives the public and reviewers a more detailed evaluation of impacts deriving from specific SBCT-related actions.

## 5.10 BIOLOGICAL RESOURCES

### 5.10.1 Affected Environment

This section is divided into discussions of general vegetation, wildlife, and habitat types common to SBMR, SRAA, and WAAF, including sensitive species and habitats known to occur or with the potential to occur in this area. Also included are federal, state, and locally regulated species, such as threatened and endangered species or species of concern.

Included in this ROI is SBMR, SRAA, and WAAF and the proposed Helemanō Trail, with a 164-foot (50-meter) buffer on either side of the trail. The ROI was determined by analyzing the extent of potential impacts of routine military training activities and foot maneuvers. Since the potential effects of fire covered the largest area and included the areas affected by the introduction of weeds, noise, trampling, soil erosion, and all other impacts, the ROI was delineated using the fuel types, human-made barriers, and topographic barriers to fire. The ROI is depicted in Figure 5-34.

#### **Recovery Plan**

There are recovery plans for 34 plant and 1 animal species that are known to or have the potential to occur within the SBMR ROI. These species are listed in Appendix I-1a.

#### **Installation Overview**

The ROI contains areas of dry cliff, montane wet, lowland wet, and lowland moist communities (R. M. Towill Corp. 1997b; USARHAW and 25th ID[L] 2001a). The three types of montane wet communities in these training areas are mixed fern/shrub, 'ōhi'a forest, and 'ōhi'a shrubland. There is also a small lowland dry shrubland area.

#### **Main Post**

The Main Post is in central O'ahu and covers over 8,860 acres of land. It shares boundaries with the Kamehameha Highway to the east, private land and Mount Ka'ala Natural Area Reserve to the north, Wai'anae Kai Forest Reserve to the west, and Luualaei Naval Reservation and private and state-owned land to the south. Botanical surveys to identify rare plants, communities, and potential threats to these resources have been conducted intermittently since 1977. HINHP conducted a comprehensive biological survey from 1992 to 1993. The Center for Environmental Management of Military Lands (CEMML) conducted an additional comprehensive botanical survey in 1997. In addition, the Army's environmental division routinely monitors and surveys for rare and listed plant species. These reports provided the foundation for much of the botanical information currently in use to describe this area. South and east of the Main Post is the SRAA.

The vegetation on the Main Post includes residential and business and range areas that consist of highly managed nonnative vegetation like grasses, shrubs, and trees. The vegetation communities in the undeveloped border areas are mainly nonnative. Species include koa haole (*Leucaena leucocephala*), an invasive species of tree that regenerates rapidly after fire and is prone to forming dense thickets that exclude all other plants. Molasses grass (*Melinis multiflora*) also regenerates quickly after fire and can inhibit the growth of other